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# BASIC NATIONAL EDUCATION



HINDUSTANI TALIMI SANGH SEVAGRAM,  
WARDHA, M. P.

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## FROM GANDHIJI'S FOREWORD \*

....What Dr. Zakir Husain and his committee have called Basic National Education is exciting fair interest in India and outside. A more correct though much less attractive description would be Rural National Education through village handicrafts. 'Rural' excludes the so-called higher or English education. 'National' at present connotes truth and non-violence. And 'through village handicrafts' means that the framers of the scheme expect the teachers to educate village children in their villages so as to draw out all their faculties through some selected village handicrafts in an atmosphere free from superimposed restrictions and interference. Thus considered, the scheme is a revolution in the education of village children. It is in no sense an importation from the West. If the reader bears this fact in mind he will be better able to follow the scheme in the preparation of which some of the best educationists have given their undivided attention.

Segaon, Wardha,  
'28th May, 1938

M. K. GANDHI

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\* This foreword was written by Gandhiji to the Second Edition of the *Basic National Education*.



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## INTRODUCTION

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### (A) The Definition of *Nai Talim* :

Gandhiji defined *Nai Talim*, or New Education, as 'Education for Life'. "The field of *Nai Talim*", he said, "extends from the moment a child is conceived in the mother's womb to the moment of death."

But the definition "Education for Life" goes deeper. It refers not only to the span, but also the content and depth of the educational process. It means that education is both 'for' and 'through' life. "Education covers the entire field of life," Gandhiji said, "there is nothing in life, however small, which is not the concern of education".

"You should bear in mind", he said further, "that this primary education would include the elementary principles of sanitation, hygiene, nutrition, of doing their own work and helping their parents at home".

Education thus conceived becomes co-extensive with life itself — with cleanliness and health, with citizenship, work and worship, play and recreation — all this, not as separate subjects of the syllabus but as inter-related processes for the development of a harmonious and balanced life.

The ultimate objective before this 'New Education', however, is not only a balanced and harmonious individual life, but a balanced and harmonious society — in Gandhiji's words, "a juster social order in which there is no unnatural division between the 'haves' and the 'have-nots' and everybody is assured of a living wage and the right to freedom".

The educational process in *Nai Talim* is therefore directed to the development of this type of individual and this 'juster social order'.

Gandhiji also emphasized another essential condition of the educational process, that it must be work-centred. "By education I mean an all-round drawing out of the best in child and man, — body, mind and spirit. Literacy is not the end of education nor even the beginning. It is only one of the means whereby man and woman can be educated. Literacy in itself is no education. I would therefore begin the child's education by teaching it a useful handicraft and enabling it to produce from the moment it begins its training....

"I hold that the highest development of the mind and the soul is possible under such a system of education. Only every handicraft has to be taught not merely mechanically as is done to-day, but scientifically, i.e., the child should know the why and the wherefore of every process....

"Given the right kind of teachers, our children will be taught the dignity of labour and learn to regard it as an integral part and a means of their intellectual growth, and to realize that it is patriotic to pay for their training through their labour. The core of my suggestion is that handicrafts are to be taught, not merely for productive work, but for developing the intellect of the pupils".

Gandhiji went a step further and said that this New Education must not only be work-centred but must also be self-supporting :

".....you have to start with the conviction that looking to the needs of the villages of India our rural education ought to be made self-supporting if it is to be compulsory....

"Primary Education, extending over a period of seven years or longer, and covering all the subjects up to the

matriculation standard, except English, plus a vocation used as the vehicle for drawing out the minds of boys and girls in all departments of knowledge, should take the place of what passes to-day under the name of primary, middle and high school education.

"Such education, taken as a whole, can be, must be self-supporting; in fact, self-support is the acid test of its reality.

"The principal idea is to impart the whole education of the body and the mind and the soul through the handicraft that is taught to the children. You have to draw out all that is in the child through teaching all the processes of the handicraft, and all your lessons in history, geography and arithmetic will be correlated, to the craft.

"If such education is given, the direct result will be that it will be self-supporting. But the test of success is not its self-supporting character, but that the whole man has been drawn out through the teaching of the handicraft in a scientific manner. In fact I would reject a teacher who would promise to make it self-supporting under any circumstances. The self-supporting part will be the logical corollary of the fact that the pupil has learnt the use of every one of his faculties. If a boy who works at a handicraft for three hours a day will surely earn his keep, how much more a boy who adds to the work a development of his mind and soul!"

This self-supporting aspect of education needs explanation as it has often been misunderstood. Reduced to its barest outlines, it means that products of the activities selected as the centre of the educational programme in the basic schools should meet the current expenses of the school.

The concept of self-support in education is, however, a concept with a deeper significance. It means that an educational system and an educational community must be self-reliant not only in the economic but also in the

social and moral sphere. It means that at the end of the period of basic education, the individual should have become self-reliant and self-supporting.

“True education is that which draws out and stimulates the spiritual, intellectual and physical faculties of the children. This education ought to be for them a kind of insurance against unemployment.”

It means a new social order. “My plan to impart primary education through the medium of village handicrafts like spinning and carding, etc. is thus conceived as the spearhead of a silent social revolution fraught with the most far-reaching consequences. It will provide a healthy and moral basis of relationship between the city and the village and thus go a long way towards eradicating some of the worst evils of the present social insecurity and poisoned relationship between the classes”.

It means a new educational technique where progressive self-reliance in all aspects of a healthy and balanced life — economic, physical, social, moral and cultural — forms the medium of education; and the necessary knowledge of subject matter is given, habits and attitudes formed, and faculties developed, through this process.

This scheme of education was accepted as the basis of university and secondary education in the report of the University Commission (1949). In the chapter of the report dealing with Rural Universities it is described in the following words :—

“At this fateful moment in our history, we have the extreme good fortune to have had presented to us a pattern and philosophy of education of such universal and fundamental worth that it may well serve as the type for bringing into being the new India which is the desire of many of us. . . . .taking this concept as a whole it presents the seeds of a method for the fulfilment and refinement of human personality, the wisdom and

excellence of which will become more apparent through the years, and will stand the test of time and of criticism.....

"The method outlined in its rudiments by Gandhiji is not just a way of meeting the educational needs of little children. He has stated the essential elements of a universal method of education, from the time a little child shares in its mother's work, through the whole process of growth of personality to the time when the mature man of disciplined mind and character works at the side of the master in the achievement of a great design. The essence of this philosophy is that education should combine practice in the everyday processes of living and working, with more formal training. This is a fundamental concept which is steadily gaining support and application in the educational world."

#### **(B) The Stages of Nai Talim :**

This New Education has been described as "Education for Life". The usually accepted educational procedure is that the educational process begins with the earliest years of childhood and in the case of the majority of children, ends with the primary stage. For a fortunate few, it extends through the secondary, high and university stages. In *Nai Talim*, however, the educational process is approached from a different angle. It seems clear that if this New Education is to be effective, its foundation must go deeper ; it must begin not with the children but with the parents and the community. The first stage in the educational programme is therefore adult education, that is the education of the community as a whole, and of every individual member, for a happy, healthy, clean and self-reliant life.

The second stage is that of pre-basic education or the education of children under seven. As soon as the child is independent of the mother and is able to walk to the school, the sphere of the educational process is extended from the home to the school. Pre-basic education, therefore,

in the fullest sense, is the education of children under seven for a development of all their faculties, conducted by the school teachers in co-operation with the parents and the community in schools, in the home and in the village.

The programme of pre-basic education includes physical nurture, medical care, personal and community cleanliness and health, self-help, social training, creative activities (both in work and play), speech training, the development of the mathematical sense, nature-study, art and music.

The third stage is the eight years' programme of basic education for boys and girls between the seventh and the fifteenth year. The objectives, programme and detailed syllabuses recommended for this stage of education are the subject matter of this book.

The fourth stage is that of post-basic education, experiments in which are now in progress in Sevagram and Bihar. This is to be conceived as the educational nurture of adolescent youth from the fifteenth to the eighteenth year of life. While basic education may be described as "education for self-sufficiency", post-basic education should be planned as "education *through* self-sufficiency." The educational community which at this stage should be residential, possibly taking the form of a "school-village", should provide opportunity for a great range of productive activities which will both support the community and afford the basis of sound and well-organised knowledge. The post-basic school should lead on naturally either to the responsibilities of adult family life in one or other of the normal productive occupations of humanity, or (in the case of those with strong natural bent and aptitude) to some form of professional training in a University.

The fifth or university stage of *Nai Talim* will demand much careful thought in the near future; in order that

the principles of education for life and through life may permeate the work of the Universities, and so that these may effectively serve the real needs of mankind, without losing any of the distinctive and valuable university tradition of sound and accurate scholarship or the zest for knowledge for its own sake. The chapter on Rural Universities in the University Commission Report referred to above is a *stimulating contribution to practical thought* on these lines.

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## BASIC NATIONAL EDUCATION



## CHAPTER I

### The Objectives of Basic Education

The objectives of basic education can be summarised as a two-fold aim, each part of which is integrally bound up with the other.

1. All boys and girls in India should grow up as citizens of a new social order, based on co-operative work as envisaged by *Nai Talim*, and with an understanding of their rights, responsibilities and obligations in such a society.
2. Every individual child should have full opportunity for the balanced and harmonious development of all his faculties, and should acquire the capacity for self-reliance in every aspect of a clean, healthy and cultured life, together with an understanding of the social and moral implications of such a life.

A few brief comments on this statement of objectives may be of help to the teacher in maintaining the true atmosphere and healthy balance of activities in the daily work of the school.

The social aspect of education has been put first in the statement of objectives because of the intimate connection between the practice of education and the social philosophy on which it is based. In *Nai Talim*, there is no room for the merely selfish pursuit of the good of the individual. The development of the individual and of the society in which he moves are the two sides of one coin ; the good of the individual is not an end in itself, it is an integral part of the common good.

It follows from this that Basic Education does seek to develop in the individual certain qualities of mind and

character which have been recognised in every civilised country as the finest fruits of true culture. These qualities are not included in the standard of attainment laid down in Chapter II, because they cannot be 'taught' directly or measured objectively. They can only be 'caught' from the spirit and atmosphere of the school, and from the personal example of the teachers. Yet no statement of the objectives of *Nai Talim* would be complete without some mention of them, and they are more important to society than any specific attainment however valuable in itself.

If the phrase "a scientific attitude of mind" is rightly understood, it expresses a great deal of the quality of personality which Basic Education should develop. A scientific *attitude* of mind is sometime quite different from the possession of scientific *information*. It means (1) a keen intellectual curiosity to know the 'how' and 'why' of things, (2) patience and detachment to test all phenomena, all ideas and all traditions by the standards of truth, (3) the courage and power to think for oneself, (4) the intellectual and moral honesty to abide by *all* the facts, and to 'cook' no results either in the laboratory or outside.

A truly scientific integrity involves the frank recognition that there are vast areas of life and experience of which our knowledge is limited and partial; it is closely allied to personal humility, to a reverence for Truth beyond our grasp, and therefore to the charity which respects other men's sincerely held religious beliefs whether we share them or not. It connotes mutual forbearance and the desire to understand the other point of view, between Hindus and Christians, Muslims and Sikhs, and also between the man of faith and the agnostic or atheist.

The true scientist's disinterested pursuit of truth is also closely allied to simplicity of life. Such a man understands the urge to get rid of encumbering paraphernalia in order to be free to work for what one most values. He understands a scale of worth in which honest dealing, trustworthiness and neighbourliness hold a higher place than wealth.

It is not suggested that every child who leaves a Basic School at the age of 15 will be consciously imbued with such an ideal. What is suggested is that an ideal of this sort is implicit in the philosophy of *Nai Takim*, and that those who accept it for themselves and attempt however imperfectly, to put it into practice, are best fitted to understand and carry out the ultimate objectives of Basic Education.

## CHAPTER II

### **The Programme and Standard of Attainment of a Basic School**

The Hindustani Talimi Sangh believes that the objectives set forth in the previous chapter can be fully achieved only if the minimum period of school education is of eight years' duration, from the seventh to the fifteenth year. The Sangh, therefore, recommends a compulsory period of education from 7 to 15 for every boy and girl in India. The Sangh also believes, on the basis of statistics already available from complete basic schools, that the continuation of education to the eighth grade need entail no extra expenditure, provided that the work in the basic craft is properly organised. Both for educational and for financial reasons the Sangh is convinced that the duration of basic education should not be less than eight years.

#### **The Programme of Work**

The programme of work, and the detailed syllabuses of study for which suggestions are given in Chapter III, will be planned round the four or five activities which experience has shown to be of the most fundamental importance for life and which offer the richest educational opportunity. These activities are :—

1. The practice of clean and healthy living.
2. The practice of self-reliance.
3. The practice of a productive basic craft.
4. The practice of citizenship in a community.
5. The practice of recreational and cultural activities.

Cleanliness and health have been given the first place in the syllabus, as our experience with village children and teachers during the past ten years has shown the primary importance of these problems in our national life. The general ignorance regarding rules of personal and community hygiene and health is so great in our country

that it is only by making it the first subject in our programme that we can hope to bring about a change. It is also expected that the activities connected with individual and collective cleanliness and health will be the first educational programme in the school day. In the earlier grades the programme will consist mainly of practical activities with oral explanation and instruction wherever necessary. In the higher grades general science and mathematics, language and social studies may be taught in connection with the activities.

It will be helpful to indicate briefly the various types of knowledge, skill, attitude and habit which should be correlated with these five centres of activity in the programme of the basic school.

1. *The practice of clean and healthy living :*

This will include the development of the personal and social habits and attitudes necessary for individual health and cleanliness and community hygiene. It will include the practical skill to carry out all types of cleaning and sanitation work efficiently. It will involve physical education, and the study of the elements of physiology, hygiene, sanitation, and dietetics in a scientific manner.

2. *The practice of self-reliance :*

This concept, as has been pointed out in the introduction, is of more far-reaching educational significance than that of economic self-support alone, but it must include economic self-support both for its own sake and as a very valuable means of character-training.

The practice of self-reliance therefore includes working for self-support in food, by vegetable growing, agriculture, the storing of food stuffs and the cooking of meals. The study of much general elementary science, such as botany, zoology, chemistry and physics, will be taken up naturally in connection with this work.

Self-support in clothing includes learning all the processes by which the cotton is grown and



the cloth manufactured, and sufficient skill in needlework and dress-making to make and repair simple garments for oneself and for younger children. It naturally involves much practice in arithmetic and some understanding of simple mathematical and physical concepts.

The practice of self-reliance should also include learning how to maintain buildings, tools and common household equipment of all kinds in good repair. This is closely connected with the practice of good citizenship in the home (see under 4).

3. *The practice of a Productive Basic Craft :*

The following three crafts are recommended as those which have been proved by experience to be most suited for children of basic school age and most valuable for developing intelligence and general knowledge :—

- (a) Agriculture and gardening.
- (b) Spinning and weaving.
- (c) Wood and metal work.

The basic craft will be learned stage by stage up to a considerably higher level of efficiency than is involved in the concept of all-round self-reliance described in the previous section. It will also be the chief centre of correlation for the "tool-subjects" of language and mathematics, and for the study of general science, and will also involve a considerable amount of social studies. It should be clear at the same time that every centre of activity can make its contribution to the mastery of the tool subjects, just as every centre of activity can contribute to the development of a strong and healthy physique.

4. *The practice of Citizenship in a Community :*

This will include, on the practical side, the development of habits and attitudes of co-operation and neighbourliness at home, at school, in the village or local community, and in relation to the State and to humanity as a whole. On the theoretical side it

will involve a study of history, geography, civics, and of sociology and economics in an elementary form related to the conditions and needs of the locality.

5. *The practice of Recreational and Cultural Activities :*

These activities can be of wide range and great variety. Games and dancing, music and drama, the celebration of festivals of social, religious, historical and national significance, will all be included. They will involve the study of good literature in the mother tongue, an introduction to the national language, and training in the appreciation of good art and music. The æsthetic side of the children's nature will be developed largely through these activities.

**The Standard of Attainment**

We have now to consider in outline what we may expect the ordinary child in the schools to achieve in the course of eight years' training.

When Gandhiji first placed the scheme of National Education before the All-India National Education Conference in 1937, he described the standard of attainment to be aimed at in the following words : —

“The course of primary education should be extended at least to seven years and should include the general knowledge gained up to the matriculation standard less English and plus a substantial vocation.”

This statement was made before the principles of basic education were actually put into practice and we had no experience behind us to state the standard in terms of the new educational objectives and practice. It was therefore necessary to use the existing educational terminology, and this had led to some confusion and misunderstanding. The workers in basic education are, therefore, often asked whether the pupils who have completed the basic course have attained, in particular subjects such as history, geography, mathematics, algebra, etc., the standard prescribed in the matriculation syllabus.

It is possible now, after nearly twelve years of

practical work, to indicate the standard aimed at in terms of the New Education. We must remember however, that we are only in the beginning of the experiment, and can only indicate the standard in outline. As the work goes forward and we gain deeper insight into and practical working knowledge of this New Education, we shall be able to state this standard more clearly and in greater detail.

The standard of attainment to be expected at the end of the course can best be stated under seven major heads, as follows :—

1. *The capacity for clean and healthy living.*

This will include :—

A harmoniously developed body, healthy and agile, capable of doing hard physical work.

Right and regular habits of health and cleanliness, a high standard of personal hygiene and an understanding of its social and moral aspects.

A properly developed sense of community cleanliness, and a knowledge of the fundamental principles of village sanitation.

The capacity to organise programmes of cleanliness for house, school, and local community.

Elementary knowledge of the organs and functions of the human body, the fundamental rules of health, and the principles of a balanced diet (carried out with locally available foodstuffs).

A knowledge of simple first aid, common local medicinal herbs, and the cause and prevention, treatment and nursing of common ailments.

2. *The capacity for self-reliance* in food, clothing, and the repair and maintenance of ordinary buildings and tools.

This will include :—

The ability to produce cloth from raw cotton.

The ability to grow sufficient food for one's own consumption.\*

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\* In many schools practical work in this section may have to be confined to vegetable gardening until adequate provision of land can be made.

The ability to cook a simple meal.

Knowledge of the principles and processes connected with the storing, cooking and serving of food for a family or a community, including budgeting and maintenance of kitchen accounts.

Knowledge of the use and care of common household tools.

The ability to ride a bicycle and to keep it in good order including simple running repairs.

3. *The capacity for self-sufficiency through a selected basic craft.*

This will involve the attainment of knowledge and skill sufficient to enable the pupil if necessary to earn his own living (i.e. balanced diet, simple clothing and other minimum needs) through the practice of the craft.

4. *Acquaintance with the fundamental scientific, mathematical and mechanical principles* as they are exemplified in the phenomena of nature and the activities of ordinary life.

This will include :—

An elementary knowledge of mechanical and mathematical principles involved in the use of tools and equipment connected with the basic and other crafts.

An acquaintance with the physical, chemical and biological principles involved in growing food and cotton, in cooking and other household arts, in the processes of the basic craft and in the maintenance of health and the provision for proper sanitation.

5. *Capacity for the responsibility of citizenship.*

This will include :—

An understanding of the ideology of a co-operative social order, and ability to work co-operatively with other people.

An understanding of the benefits of a decentralised economy based on regional self-sufficiency and the practice of cottage industries, and of the nature of a healthy relationship between village and town.

An elementary knowledge of the place and value of co-operative societies and the principles involved in their organisation.

An elementary knowledge of the economic, social and political problems of India and the world as gained through the intelligent study of newspapers and magazines.

An elementary knowledge of the geography and history of India and the world, especially in so far as it is necessary to the understanding of present conditions. This should include knowledge of the founders and teachings of the great world religions, and the religious, social and historical significance of the fairs and festivals locally celebrated.

6. *Sufficient mastery over tool subjects* such as language and mathematics to enable the pupils to carry on their daily activities efficiently and to further their knowledge after the completion of the basic course.

This will involve, in *language* :—

The ability to speak clearly and with reasonable fluency in public and school assemblies on subjects of practical importance in the school or village community.

The ability to express ideas clearly and accurately in writing, and to draw up a well-planned report.

The ability to speak, read and write simple Hindi, when this is not the mother tongue.

In *arithmetic*, accuracy and reasonable speed should be attained in the following processes related to the needs of actual life :—

The significance of numbers.

The four fundamental operations (addition, subtraction, multiplication and division) applied to common weights and measures, money, time and distance.

Practical mensuration.

Elementary account keeping.

Use of the unitary method, the rule of three, ratio and proportion, problems in speed and work.

7. *The capacity to appreciate true art, form good taste, entertain the community and use leisure time with profit and pleasure.*

This will include :—

An acquaintance with good literature in the mother tongue.

An acquaintance with some good examples of pictorial and plastic art, and experience of self-expression through drawing, painting, clay-modelling etc.

A knowledge of some good music, classical and traditional, and ability to sing devotional and national songs in chorus.

An acquaintance with the traditional decorative arts of the locality, and the power to discriminate between good and bad taste in the adornment of the person and the home.

Some experience in helping to organise dramas, festivals and other cultural activities for the school and the local community.

*Note:—*In the detailed syllabus which follows, the division of work grade-wise is *suggestive* not *obligatory*. The syllabus is an elastic one. It indicates the amount and kind of knowledge that should be acquired by the end of the eight years course, and the subject-matter has been arranged in an order roughly corresponding to the increasing maturity of the children. In cases where the average of a class is much higher or lower than that indicated here, parts of the syllabus may have to be modified accordingly. Other modifications will no doubt be made to suit actual circumstances. Throughout it is expected that in the course of daily school life there will be frequent references back to material dealt with in an earlier grade, so that a practical knowledge of the skills and subjects taught, once acquired, will not be lost.

## CHAPTER III

### DETAILED SYLLABUS

#### A. Capacity for Clean and Healthy Living

The importance of training in personal and collective cleanliness, and the reasons for placing it first among the objectives of a good general education, have been explained in Chapter II.

Practical work comes first and must be carried on right through the school. It is only by regular daily practice that habits of cleanliness can be thoroughly established and a right attitude of mind formed.

Children who have previously attended a pre-basic school or class should already have begun to form correct habits when they enter Grade I, and these must be carried on and developed. If there is no pre-basic foundation, these activities should occupy the chief place in the daily programme for the first two or three years of school life.

It will be noticed that this programme cannot be carried out fully except by co-operation between the school and the homes of the children, and it is of the greatest importance that the teacher should win the support of the parents from the very beginning. Nearly all parents, if properly approached, will be glad to co-operate for the physical well-being of their children.

There are two factors which, if they can be introduced, will greatly facilitate the success of this syllabus of work, and also of the syllabus in Social Training and Citizenship. These are :—

##### 1 *A School Meal:*

Basic schools are normally non-residential schools serving a small area, and the children take their food at home. There are however various possibilities. A "lunch" or "snack" of some kind, calculated to supply the commonest deficiencies of the home diet, may be provided.

If the children themselves can prepare it from the produce of their class and school gardens, so much the better. Children may occasionally bring their own food to school and to be trained to eat it cleanly and with good manners. Class and school "feasts" and "picnics" may be arranged on special occasions; the children may plan to supply the raw food materials from their homes and prepare, serve and eat the meal as a community project.

## 2. *A School or Village Dispensary:*

In places where there is no medical aid of any kind the teachers and children of a basic school can perform a great service by running a simple dispensary open to their neighbours. Where a dispensary or child welfare centre already exists, they may co-operate in the work to the benefit of all concerned. Wherever possible they should be on friendly terms with local doctors and constitute themselves a volunteer squad to render general assistance whenever it is needed.

The practical programme for cleanliness and health may be divided into four sections:—

1. How to keep oneself clean.
2. How to keep one's surroundings clean.
3. How to keep oneself healthy.
4. What to do in illnesses and accidents.

Knowledge of the underlying scientific principles of hygiene, physiology, nutrition etc. may be correlated with the programme as suggested below.

*Grades I, II and III (age 6 to 9 years).*

In grades I, II and III the syllabus under this head is entirely practical, and information about "why" we should do this or that should be given, in a very simple way, only when the children ask for it.

### *Section 1. How to keep oneself clean.*

This will include training in:—

- (a) How to answer calls of nature — the proper time, the proper place, the proper use of water, earth, etc.
- (b) How to clean the eyes and ears, hands, feet and nails.



- (c) How to clean the nose and mouth, gums and teeth. Materials for cleaning teeth. Gargling, spitting, and cleaning the nose in a proper way.
- (d) How to clean the hair and scalp. What to do about lice.
- (e) How to bathe — keeping the body and skin clean.
- (f) How to wash clothes and arrange them properly.
- (g) How to keep bedding clean.
- (h) How to eat and drink in a clean way — clean room, utensils and hands ; keeping flies away.
- (j) How to keep one's personal possessions (utensils, toys etc.) clean and tidy.

*Note:—* This will involve a gradually increasing familiarity with the cleaning agents locally in use — earth, ash, dal-powder, *imli*, tamarind, soap, etc. The children should learn how to keep these neatly.

### *Section 2. How to keep one's surroundings clean.*

- (a) Cleaning of class rooms, verandahs and compound.
- (b) Cleaning of almirahs and proper arrangement of books and papers.
- (c) Keeping all school equipment clean and tidy — i.e. the tools for all crafts including gardening, sanitation equipment and play things.
- (d) Disposing of refuse, waste material and dirty water in a proper way.
- (e) Helping to make, store and repair all equipment for cleanliness.

*Note:—* This programme will not be complete unless the standards of cleanliness insisted on in school are gradually extended to the homes also. The best proof that right attitudes are being acquired is that children should spontaneously take the initiative in cleaning up their home surroundings with the friendly support of the teacher.

### *Section 3. How to keep oneself healthy.*

- (a) Eating : When, how and how much we should eat. Why no rice or *roti* during illness.
- (b) Drinking-water : When, how and how much. How to keep the drinking-water clean at home and at school.

- (c) Elimination : (See Section 1 a). Why it is necessary for health.
- (d) Breathing : How we should breathe ; why through the nose and not through the mouth.
- (e) Sleeping and resting : When, how and how long. Why we should not sleep in a closed or crowded room, or cover our faces.
- (f) Growing : Monthly records of weight should be kept. The children should discuss them freely — why weight should increase.

*Section 4. What to do in illnesses or accidents.*

In these grades the work should be based on actual occurrences among the children in the class. Cases of fever, cold, indigestion, sore eyes, running nose, skin disease, boils, etc. are sure to occur. Cuts and scratches, burns and blisters etc. will happen during gardening, kitchen work or play. The children should watch and help the teacher as he treats these cases, and should be told very simply how they are caused and how they can be prevented.

The foundations of the all-round programme should be laid in Grade I. In Grade II the children should be able to take a greater share of responsibility for the cleanliness of their persons and their class room. In Grade III their habits and attitudes should be so developed that they can help with the care of younger brothers and sisters, and can carry out the ordinary routine of class room and compound cleanliness without the help of the teacher. Children in Grade III will usually be old enough to take responsibility for the cleanliness of their homes and court-yards, and to share in programmes of collective cleanliness in school and village.

*Grade IV (age 9 to 10 years).*

*Section 1. How to keep oneself clean.*

Continue and develop the work of previous grades. The connection between uncleanly habits and the illnesses that occur in the village should be clearly understood.

*Section 2. How to keep one's surroundings clean.*

The syllabus of the previous grades should be

continued, but the children should be trained to plan the work for themselves, and to assess and report on the results.

In addition, special attention should be given to the following :—

- (a) How to clean roads and paths.
- (b) How to keep wells and tanks clean.
- (c) How to clean water-channels and drains, and make a soak-pit.
- (d) How to keep the kitchen and eating-place clean.
- (e) How to prevent the breeding of mosquitoes and flies.

Children of this grade should help Grades V and VI in the care of latrines and urinals and the making of compost manure.

### *Section 3. How to keep oneself healthy.*

Elementary principles of healthy living :—

- (a) Food : What kind of diet do we need ? The "Basic Seven" — cereals, dal or nuts (for non-vegetarians meat, fish or eggs), green leafy vegetables, raw fruit, root vegetables, milk or curds, fat or oil. Scientific terms like protein, vitamin etc. should not be introduced at this stage. The children should understand their needs in terms of the locally available food-stuffs.
- (b) Drinking-water : Provision of clean drinking-water for the class. Sources of water — sources of unclean water — methods for making and keeping it clean.
- (c) Fresh pure air : Ventilation of home and school, fresh air during sleep, breathing exercises.
- (d) Work (exercise) and rest : Proper times for work, rest and physical exercise. Making a daily programme for healthy living.
- (e) Happiness : Mental contentment is necessary for health.

Health Records :—

The children should themselves maintain indivi-

dual and class records of height and weight, of illness in the class and their treatment.

(See Section 4).

*Section 4. What to do in illnesses and accidents.*

- (a) A more systematic study of some common illnesses, their causes, treatment and prevention (in connection with illness among the children). These may be : indigestion and constipation ; coughs, colds and malarial fever ; itches.
- (b) Treatment of simple cuts, grazes and cracked feet, insect and scorpion stings.
- (c) Use of saline gargle, saline and boric lotion, sulphur, iodine etc.
- (d) Very simple dressings and bandages.

*Grade V (age 10 to 11 years).*

*Section 1. How to keep oneself clean.*

The work of Grade IV should be continued, with emphasis on personal cleanliness as a social duty.

*Section 2. How to keep one's surroundings clean.*

In addition to the routine of cleanliness in the class room and at home, Grade V children should undertake the following :—

- (a) Organisation of general cleaning-up programmes for the whole school—preliminary survey, planning, distribution of work, selection of equipment, assessment of results, preparation of report.
- (b) Responsibility for school latrines and urinals and the disposal of waste and refuse of all kinds. Preparing and maintaining soak-pits at school and at home.
- (c) Cleanliness in cattle sheds and in the housing of all domestic animals and birds.
- (d) A study of the types of brooms, baskets, dustbins, etc., in common use—collecting materials, making them, placing dustbins in proper places. Responsibility for storing, numbering, distributing and stock-taking of cleaning equipment for the whole school.

### *Section 3. How to keep oneself healthy.*

Children of this grade should begin to understand the scientific basis of physical well-being.

- (a) A *general* knowledge of the human body, its parts and their functions. Toning-up the body by exercise.
- (b) A *general* knowledge of the types of food needed for the health of bones, blood, skin, eyes, nerves, etc., using (as in grade IV) common names and not scientific terminology.
- (c) A *general* knowledge of the characteristics of healthy clothing and housing.
- (d) Maintenance and study of *school* health records as well as those for the individual and the class.

### *Section 4. What to do in illnesses and accidents.*

- (a) A more systematic study of the common infectious and contagious diseases affecting children, on the occasion of local infection or epidemics — small-pox, chicken-pox, influenza, measles and whooping-cough. Their causes, treatment and prevention.
- (b) Treatment of simple burns and scalds, sprains and bruises, boils and sore eyes. The necessary dressings and fomentations.
- (c) Use of common disinfectants in connection with the sick-room, sanitation and the prevention of epidemics.
- (d) The preparation of simple invalid diets.

### *Grade VI (age 11 to 12 years).*

#### *Sections 1 and 3. How to keep oneself clean and healthy.*

- (a) The daily practical hygiene programme should be maintained, and each activity of the morning routine, school programme and evening routine should be reviewed to bring out the scientific principles of health and hygiene upon which correct habits of living are based.

(For detailed suggestions see Chapter IV).

- (b) A special study of health-giving morning

exercises, and of healthy postures in work and rest. Beginnings of sex-hygiene.

(See note below).

- (c) Beginnings of a scientific study of food values :
  - Food for energy — calories and their sources, starches, sugar and fats.
  - Food for building and repairing the body — proteins and their sources — complete and incomplete proteins.
  - Food for strengthening and regulating the body — minerals (calcium, phosphorus, iron) and their sources.
  - Food for smooth and healthy functioning — Vitamins A B C D and their sources.
- (d) Study of the functions of the human body and how they are performed :
  - The skeleton and muscular systems.
  - The digestive and excretory systems.
  - The respiratory and circulatory systems.
  - The nervous system.
  - The reproductive system.

(See note below).

*Note:—* It is desirable that the subject of sex and the elementary facts of reproduction should be presented to children in a simple, objective but reverent manner *before* the physical and emotional developments of adolescence take place. Questions about the origin of babies are commonly asked by much younger children, and if these are frankly and naturally dealt with as they arise, children of Grade VI age are ready to be given sufficient knowledge and (what is at least equally important) the reverent attitude of mind for clean living during adolescence. No rules can be laid down, for it is imperative that each teacher should approach the subject in the way most natural to him (or her) and most suited to the circumstances of the children. Questions arising from births at home, or from the observation of plants and animals at school and in the village, often make a natural starting-point. Two principles however should be kept in mind :

1. Sexual information should not be given an artificial or morbid interest by being treated as different in kind from any other piece of biological knowledge. A matter-

fact, natural attitude is helpful; the children should take this biological knowledge as much "for granted" as their knowledge of (say) the processes of digestion and excretion.

2. On the other hand, children must not be given the impression that man is *merely* an animal and may behave like one with impunity. The functions of sex make possible the privilege of home and family life; they must be treated with reverence and a sense of responsibility in preparation for one's place in society.

#### *Section 2. How to keep our surroundings clean.*

- (a) Study of various types of latrines and urinals, their advantages and disadvantages in various soils and seasons.
- (b) The preparation of compost manure, scientifically carried out — where and how to dig the compost pit, the correct mixture, the action of bacteria, temperature and moisture, the value of animal and human excreta — the chemical composition of urine and its action as a "starter".
- (c) The cleanliness of places of public resort — wells and tanks, open-air meeting places, dharmasalas, places of worship.
- (d) Cleaning bushy growths and destroying the breeding-places and haunts of flies, mosquitoes, snakes and scorpions within the village.
- (e) Constructing good pathways for the village where they are needed.

#### *Section 4. What to do in illnesses and accidents.*

- (a) Continue and develop the study of common diseases, especially affections of the alimentary tract — diarrhoea, dysentery, hook-worm, typhoid, cholera etc. — their causes, treatment and prevention. Sanitary precautions.
- (b) The use of aperients and purgatives. Suitable invalid diets.
- (c) Growing a herb garden of local medical herbs. When and how to use them.
- (d) First-aid in snake-bite and fainting fits. Treatment of shock.

*Grade VII (age 12 to 13 years).*

*Sections 1 and 3. How to keep oneself clean and healthy.*

- (a), (b) The Grade VI syllabus should be continued and developed.
- (c) Food : How to prepare and cook all types of common food materials so as to retain the maximum nutritive value.  
Experiments (where possible) with unfamiliar foods and the diets of different provinces, with a view to overcoming prejudices and enlarging tastes.

*Section 2. How to keep one's surroundings clean.*

- (a) The use of kitchen and bathroom waste water for the vegetable garden — demonstrations in homes — improvement of surface drainage in the village.
- (b) Latrines and urinals in the homes ; public latrines and urinals in the village — number and type needed — their care — composting — need for active co-operation in organisation and use among the villagers.
- (c) Participation in adult programmes for village sanitation and the creation of public opinion in the matter of unhygienic habits.
- (d) The preparation of reports, exhibitions, charts, posters, literature, dramas etc. for use in the above programmes. Preparation of sanitary statistics for the village or mohalla.

*Section 4. What to do in illnesses and accidents.*

- (a) Simple home nursing : Choice of the corner in a one-room hut best suited for a patient — planning of a sick-room where a separate room or verandah is available.  
General nursing of a patient in bed in the poorest village home in existing conditions. How nature works in curing disease and how to help nature.
- (b) Principles and practice of sterilisation in the simplest and poorest conditions. Prevention and treatment of sepsis.



- (c) First-aid in dog or jackal bites, poisoning accidents, drowning (artificial respiration), foreign bodies in eye, ear, nose and throat.
- (d) Cause, prevention and treatment of diseases of the respiratory tract (bronchitis, pneumonia, pulmonary tuberculosis) and filaria where that is common.

*Grade VIII* (age 13 to 14 years).

The whole programme of work for health and cleanliness should be reviewed during this grade and the following aspects of it should receive special attention

1. The social and moral obligation of care for personal health and cleanliness.
2. Preparation for the assumption of full adult responsibility for the cleanliness and health of one's family and one's village.
3. Knowledge of the agencies working for health and sanitation. Methods of co-operation with public health services, with hospitals and local dispensaries, and with maternity and child welfare centres.
4. A comprehensive survey of the condition and needs of the whole area in matters of health and sanitation. Propaganda (based upon the facts collected) for the prevention of disease and the improvement of local diet with locally available materials.
5. In the section on illness and accident, attention should be paid to leprosy and plague (where that is locally present), and to fractures and dislocations, the control of severe bleeding, and the transport of the injured.  
Pupils should be trained to recognize cases where it is unwise for an amateur to interfere and where it is essential to seek immediate medical aid.
6. An elementary acquaintance with the various methods of treatment of disease—house-hold remedies, "nature cure", and the ayurvedic,

allopathic and homeopathic systems. Some great names in the history of medicine.

7. Preparation of a list of the minimum equipment and medicines needed for a school or village dispensary, with knowledge of how they are used and where to obtain them.  
Equipment of a first-aid box.

**B. Capacity for self-reliance in food, clothing and the repair and maintenance of ordinary buildings and tools.**

**1. Food:**

In all schools, whatever the basic craft chosen, the syllabus in Gardening and Agriculture (See Section C, p. 26) should be followed up to Grade V. In schools where a different basic craft is chosen, the pupils of Grades VI to VIII should continue to maintain an all-the-year-round vegetable garden as a subsidiary activity; arrangements should be made in co-operation with parents for them to observe and assist in agricultural operations in the village and the care of field crops.

Simple cookery, including the care and arrangement of the kitchen, the cleaning of grains, and the serving of the meal, should be practised in Grades IV and V in connection with the syllabus in Cleanliness and Health. In Grade VI special attention should be paid to the proper storage of food articles and to the processes of husking, grinding etc., in relation to the preservation of food values; and in Grade VII the whole syllabus in Health (food values) should be based on actual practice in preparing and serving food by scientific methods. In Grade VIII special attention should be paid to well-planned menus, family food-budgets and household accounts.

**2. Clothing:**

In all schools, whatever the basic crafts chosen, the syllabus in spinning, weaving and needlework (Section C, p. 40) should be followed up to Grade V. Where this is not the basic craft the school should provide time and facilities for the children of Grades VI to VIII to maintain and improve their skill in the different processes (including

weaving). After Grade V children should not need regular classes in spinning, ginning or carding, but half an hour every day should be set apart during school hours for work for cloth self-sufficiency, and pupils should be encouraged to spin and weave outside school hours and to maintain records of the work done at home by themselves and the members of their families.

Besides the regular practice of all the processes of cloth-making as taught up to Grade V, children of Grades VI, VII and VIII should be trained to plan a complete year's programme of work for self-sufficiency in clothing, to prepare the budget and keep all necessary records and accounts. In Grade VI they may concentrate on their individual needs, in Grade VII on those of their families, and in Grade VIII on the cloth self-sufficiency programme of the village as a whole.

An elementary knowledge of the mechanism of the different pieces of apparatus used in the processes, ability to fit them up, carry out simple repairs and keep them in good order should be included in the training.

### *3. Household Tools and Repairs :*

Training in the use and care of common household tools should begin from Grade IV in connection with the syllabus for cleanliness of the environment. In Grade V it may be carried out in connection with the study of healthy housing (p. 20) and in Grade VI with the making and repair of equipment for storing food and the making and repair of fences. Seasonal and other repairs to school and home buildings, protection of structures against rain, whitewashing, oiling, painting, and other methods for preserving woodwork, may be practised in Grades VII and VIII. If possible the school should possess a cycle, which the pupils of Grades VII and VIII should be trained to ride and care for, and keep ready for immediate use for community business or emergency. (See e.g. First Aid for Grades VII and VIII in Section A pp. 23 and 24).

#### **C. Self-sufficiency through a selected basic craft.**

Any craft which fulfils the following conditions may be accepted as the basic craft of the school.

1. It must be sufficiently rich and varied in educational possibilities for the necessary knowledge of subject matter, habits and attitudes (particularly in language, general science and mathematics) to be developed with reference to it.

2. It must be of such economic value that the boy or girl who completes the full basic course can if need be earn sufficient for a balanced diet and other minimum necessities by its practice as a vocation.

The crafts of (a) gardening and agriculture (b) spinning and weaving have been found in practice to fulfil these conditions extremely well, and are practicable in some form in every part of India. There is no objection however to the adoption of any other suitable basic craft where local conditions favour its introduction (e.g. carpentry in forest areas).

Out of the total work-hours available for craft-work, two-thirds may be devoted to the basic craft, and the rest to the subsidiary craft or crafts practised in the school.

#### **I. Syllabus in Gardening and Agriculture as a basic craft.**

##### *Introduction :*

A syllabus in gardening and agriculture cannot, for obvious reasons, be laid down in detail on an all-India basis. The following syllabus is confined to indicating general principles for the guidance of teachers and workers.

Gardening is a compulsory subject in the first five grades of all basic schools. Where it becomes the basic craft for Grades VI — VIII, the pupils who complete the course must have the necessary knowledge and skill to earn their living by agriculture. Children in the last three grades should be physically sufficiently developed and mentally sufficiently responsible to make their school economically self-sufficient by their co-operative efforts.

Where this is the basic craft, the school should possess sufficient wet, dry, and garden lands for balanced cultivation (see below). The extent of acreage will vary from place to place, and must be determined according to locality.

In normal conditions, a child attends school in his own village, and so his home life and activities should also be included in the educational programme. The school should not only permit but encourage him to assist his parents whenever there is pressure of work in the home-farm. Proper records of such work should be maintained by the pupil concerned and assessed by the teacher.

The following types of crops are suggested for balanced cultivation. Local varieties of all these types should be cultivated, subject to natural limitations of soil, climate and irrigation.

1. Vegetables for daily family use ; brinjals, bendai, tomato etc. ; roots and tubers ; legumes ; pumpkins and gourds ; green leafy vegetables (*sag, keeraï*) ; some spices.
2. As many common local fruits as possible.
3. Cereals — wheat, rice, ragi, maize, jowar and other millets.
4. Pulses in common use.
5. Oilseeds in common use.
6. Some sugar-cane.
7. Cotton sufficient for school needs.
8. Fodder for cattle.
9. Timber and firewood in fences, bunds<sup>1</sup> etc.
10. Flowers along hedges and near living quarters.

*Grades I—III. (6—9 years)*

Children of this age will mainly observe and help according to capacity in the work of their elders at school and at home. But they should also have a separate plot of their own for growing flowers and vegetables with the help of the teacher. Gardening tools should be suited to their size and strength.

Observation will include :

1. Visits to the school gardens and fields managed by the older children, the gardens and fields of the village, and places of special interest in the neighbourhood such as river beds, sand dunes, woodland etc.

2. Fruits and vegetables in season at the local market, their price.
3. Harvesting, storing and marketing of different crops.
4. Common birds, insects and animals of the neighbourhood, both domestic and wild.

Activities for the various grades are given below. At every stage the proper care and arrangement of all implements should form an integral part of the work.

*Grade I. (6—7 years)*

1. Choosing and preparing the land (which should be ploughed or dug for the children) — collecting manure and manuring — the plant needs food from the soil, water, light and air.
2. Sowing the seeds — proper spacing to give the plants room to grow — protecting them from their enemies. Fairly large seeds, which do not need transplanting (e.g. radish, bendai, beans, pumpkin) should be chosen.
3. Care of the plant — watering, weeding, mulching, removing insects. Development of the different parts — root, stem, leaves, flowers, fruits and ripe seeds.
4. Collecting and weighing vegetables. Collecting flower and vegetable seeds.

*Grade II. (7—8 years)*

1. The land — preparing small seed-beds or seed-pans and also garden beds to receive transplanted seedlings. Digging, manuring and kurpi work.
2. Sowing seeds — recognizing good and bad seed — labelling plots or pans.
3. Transplanting — when is the plant big enough? How? — spacing, handling, planting, watering, protection.
4. Care of the growing plant — watering, weeding, manuring, removing pests. Very simple account of the function of different parts of a plant and of the harm done by weeds.

5. Collecting and weighing vegetables — value of produce — accounts.
6. Collection of seeds — when and how — choice of good seed.
7. Useful and harmful creatures including ants and earthworms.

*Grade III.* (8—9 years)

Grade II syllabus continued, but with less help from the teacher. In addition, the following items :—

1. Soil — the food of plants — the function of manures.
2. Seeds — how they germinate — observation and record of the stages of germination.
3. Transplanting — some common vegetables which need it.
4. Protection of the growing plant and the crop — study of some common pests — life history of the butterfly.
5. Harvesting, weighing, storing, selling and accounting.
6. Ripe seeds — how they are dispersed (some garden plants and weeds) — how to select and store seed for the next crop.
7. Cleaning the ground — use of plant waste for compost etc.

*Grade IV.* (9—10 years)

1. Preparing a programme for a year's work in the vegetable garden. (The choice of crops should be related to nutrition needs. See p. 18).
2. Planning, measuring out and making vegetable plots, paths, water-channels, fruit tree borders, fences etc.
3. Soil — how it is formed (visit to neighbouring hills if possible to see this) — digging, manuring and preparing the land.
4. Seeds — principles of sowing — depth and distance — very fine seed — protection from ants etc. — advantage of a nursery.

5. Seedlings — methods of watering delicate seedlings — how, when and why of transplanting and thinning — protection from sun and heavy rain.
6. Annual and perennial plants. Propagation without seed, by cuttings, tubers, suckers etc. The commonest local examples.
7. Harvesting, storing and accounting. Composting and cleaning of land.
8. Wherever possible, the care of poultry.
9. Diary of the year's work. Records and assessment of achievement compared to the planned programme. Maintenance of simple wind and weather charts.

*Grade V. (10—11 years)*

Pupils of this grade should be able to grow vegetables all the year round and help intelligently with the cultivation of field crops at school or at home.

1. Planning the year's programme in the light of the previous year's experience, and in relation to the area of land and the number of children available for work.
2. Preparation of land as in Grade IV. Calculating the amount of manure needed. Planned composting (see also p. 19).
3. Soil — recognition of local soils by local names — sand, gravel, loam, clay. Manuring improves soil composition.
4. *Elementary* study of plant forms from common examples.
  - (a) Roots — tap roots, fibrous roots, adventitious roots.
  - (b) Stems — woody and fleshy, erect plants, climbers and trailers.
  - (c) Leaves — various shapes and arrangements for catching light.
  - (d) Flowers — the parts and their arrangement, colour and scent.



(e) Fruits — various arrangements for protection and dispersal of seeds.

(f) Modifications of root, stem and leaves in common vegetables — bulbs, corms and tubers.

5. Control of pests and weeds in relation to their methods of propagation (elementary).

6. Domestic fowls and animals — care of poultry continued ; care of cattle to be introduced in co-operation with homes if there is no school farm.

(See syllabus in cleanliness and health p. 19).

7. Diary and records as in Grade IV.

*General notes on work in Grades VI—VIII.*

1. *Daily records* of agricultural operations should be carefully and systematically kept, and a "farming calendar" showing work from month to month, prepared from them. The children will also record daily temperature, rainfall, wind and weather conditions, and learn to forecast probable changes in the weather from sky signs and barometer readings. The weather chart for one year should be used as guide in the work of the following year.
2. *Planning and assessment* are most important if the full educational possibilities of agriculture are to be realised. Planning in itself is a source of education, and valuable training in language and mathematics can be given through the discussion and writ-up of the plan and the calculation of the various factors involved. The sustained co-operative effort needed for the carrying out of the plan, and the assessment of the reasons for success or failure, give much practical social training. This is in addition to the knowledge of general science gained in the various operations. In Grade VI the children will need more guidance from the teacher than in later grades for making

their plan. All plans must take the following points into account :—

- (a) The extent of dry, wet and garden land available. Irrigation.
- (b) Manure available, extent of composting possible.
- (c) Number of children and amount of time for daily work. Arrangements for school vacations.
- (d) Varieties of crops proposed, amount of produce expected. A knowledge of the principles of crop rotation should be built up gradually in this connection.
- (e) Amount of seed or seedlings needed.
- (f) Equipment needed in tools and livestock.
- (g) Storage and disposal of produce.
- (h) Amount of expenditure involved and income expected.

Assessment of the work will be in terms of the plan. Where achievement falls short, the reasons should be studied and reported — defective planning, execution or materials ; unforeseen circumstances ; failure in responsibility by individuals or the group.

### 3. *Subsidiary activities.*

A number of occupations and industries are closely related to agriculture, — poultry, sheep and cattle-breeding, bee-keeping, palm-gur, oil pressing, silk-culture, mat weaving etc., etc. Wherever possible one or more of these should be included in the school programme.

### 4. *Traditional Wisdom and Nature Lore.*

There are scores of proverbs in the Indian languages a study of which will suggest new lines of thought to teacher and pupils alike. The children should collect verses, proverbs and sayings relating to weather and agricultural operations, and should study this traditional wisdom in relation to their own work.

### 5. *Study and care of tools.*

All the tools used in the various activities should be systematically studied — the proper size, shape and

proportion of parts, the mechanical principles involved in correct handling and use, the woods used for their manufacture, cleaning, oiling and care when not in use.

*Grade VI.* (11 to 12 years).

1. Soil—Study of local soils, continued—the various kinds of crops grown on gravel, sand, clay and loam. Elementary knowledge of how to control soil moisture, texture and aeration and the reasons for doing so. Value of humus. Value of the earthworm.
2. Levelling, Terracing and Bunding: Purpose of levelling—retention of water and prevention of soil erosion—methods. Terracing and terrace cultivation—local examples. The lie of the land in the neighbourhood. Planning and making irrigation channels and bunds—principle of gravitation.
3. Preparing the ground: Use of local tools—digging with spade and crowbar—systematic study of these and of the correct posture in use. Need for a crowbar. Clod-crushing—where and why necessary—implements used.
4. Manuring: Need of manure as plant food. Various organic manures, their value and importance. Scientific making of latrine compost (as in cleanliness syllabus p. 20). Value of tank silt. Local green manure plants—value of leguminous plants for the fixation of nitrogen—observation of some common legumes.
5. Sowing and transplanting: A more systematic study of various methods (already practised in earlier grades) adopted for various types of seed—drilling, dibbling, broadcasting, nursery and its advantages, use of ridges and furrows, covering, protection from enemies. Study of the seed. Formation: Male, female and bisexual flowers and the principle of fertilisation, work of bees, insects, wind etc.

Parts: embryo and cotyledons—monocotyledons and dicotyledons, good and bad seed. Germination: observation of the process—time taken by common cereal, vegetable and fruit seeds—effect of temperature and moisture.

6. Watering: Sources of water—rain, rivers, tanks, wells, artesian wells. Methods and implements for hand-watering—can and rose, bucket, hose and water channels. Danger of water-logging—simple methods of providing drainage. Function of water in plant-life—how the roots absorb soluble food-materials—capillary action—how leaves breathe. Retention of soil moisture—mulching—use of leaves, straw, paddy husk etc.
7. Weeding: Harm done by weeds in exhausting soil nutrition and moisture, crowding out garden plants, harbouring diseases. Systematic review of practices already learned—the proper time for weeding, the various implements used, the use of weeds for compost and cattle-feed—when they should be destroyed by burning. Common local weeds with nutritive or medicinal value—recognition and use.
8. Control of pests: (a) Methods of protection against animals—deer, porcupine, wild pig, monkeys, rats etc., etc. Fencing—local types—advantage of a live fence—suitable hedge plants and trees. Provision of green manure, timber and firewood. Possible dangers—encroachment of roots on cultivated land, harbouring pests, obstructing light. Pruning. (b) Recognition of noxious varieties of insects, beetles and caterpillars and the damage done by each (c) Recognition of diseases—stem bleeding, fungus, leafrot, rust, die-back. Elimination of diseased plants or parts. (d) Preparation and use of simple insecticides and

fungicides — kerosene, crude oil and tobacco emulsions, fish-oil soap, sulphur, lime. (e) Importance of proper plant nutrition in resistance to disease (of health syllabus p. 20).

9. Care of crops: Mulching, why and when, Supports - stakes, trellis, pandals - best treatment for each type of plant. Pruning — purpose, types (of roots, buds, superabundant foliage, branches), proper time, correct methods and treatment. Use of pruned parts for compost, cattle feed or fuel.
10. Harvesting. Recognition of maturity in crops and fruits. How and when to pick for immediate or delayed use. Care and efficiency in harvesting and gleaning.
11. Storing and preservation: Treatment of hardy vegetables, delicate vegetables, roots, fruits and produce to be consumed raw. Convenient storing racks, baskets and sacks. Choice and preservation of seed for next sowing.
12. Marketing and accounting. Knowledge of village requirements and local marketing conditions. Sale in village, outside markets, at fairs and festivals. Maintenance of accounts.

*Grade VII.* (12—13 years)

1. Soil: Formation of soil by weathering of rocks — action of air, water and heat. Mineral matter in the soil — the importance of calcium, carbon and nitrogen. Improvement of sandy soil with green manure, farmyard manure and tank silt; of clay with lime and river silt. Chemical and physical properties of a good farm soil. Choice of crops suited to the soil available.
2. Levelling and bunding: Revision of Grade VI work. Soils suitable for bunding, adhesive properties. Varieties of binding grass. Correct size of field bunds (if too large they harbour pests). Maintenance of tank and canal bunds — trees on bunds, value of palm. Prevention

of soil erosion — contour ploughing — reading and interpretation of maps showing physical features.

3. Preparing the Ground : Ploughing of dry lands, how, why and when. Systematic study of the plough and its accessories—structure, materials, types and mechanical efficiency in relation to soil condition. Clod-crushing : continued study of the soils, seasons and conditions for which it is necessary. Removal of stubble, its use as cattle feed, compost material or fuel.
4. Manuring : Various methods of conserving farm-yard manure and of composting. Revision of the composition of urine — chemical composition of manures — chemistry of decomposition — the generation of heat — recognition of well-rotted manure and danger of using it too hot. Other manures : animal bones, their chemical composition, making bonemeal by burning them with paddy husk. Fish guano in coastal areas. Pouderette from human excreta. Application of manure : the stages of the plant's development when it is most beneficial — experiments with manured and unmanured plots — various types of manure for various crops and purposes.
5. Propagation and planting : Revision of Grade VI work on fertilisation and germination of seeds. Propagation by other methods. Suckers : what is a sucker ? local examples, care in separating suckers, modified stems (tubers) : cutting and planting, growth from "eyes". Cuttings and stakes : growth of buds. Layering : common fruit trees. The biological principles underlying these methods.  
Transplanting. For which plants it is beneficial and for which harmful. Importance of firm planting — why ? Thinning of crops — why, when and how.

6. Watering. Chemical analysis of available water. Hard and soft water — use of lime to neutralise sulphur salts.  
Rainfed, canalfed and well irrigation — areas in the district, province and India where each is used. Crops suitable for each. Study of water-lifts. The picotah — material used — live *odina* tree or granite pillar — principles of lever and balance, fulcrum and axle. Use of bullock-power — strait and circular movements — aids to mechanical efficiency — types of Persian Wheel.
7. Weeding. As in Grade VI. Control of weeds by interculturing — crops suitable for this treatment. Local parasite plants — parasites and epiphytes — harm done to trees by creepers.
8. Control of pests: Life history of common insect pests in relation to easy methods of control. What is a fungus? — elementary biology of fungi — edible fungi such as mushrooms. Bordeaux mixture — preparation from zinc sulphate and calcium carbonate — testing correct proportions with an iron nail — chemical reaction involved. Poisonous insecticides — contact poisons and stomach poisons — use of lead arsenate — preparation, application and care in handling. Dusting and spraying — mechanism of the sprayer. Light traps, their preparation and use. Burning diseased plant parts.
9. Harvesting and Storing: As in Grade VI. Threshing — preparation of the floor, simple local methods, use of animals. Winnowing — local winnows, material used, manufacture and use, wind strength and direction. Drying grain — its importance, effect of temperature and moisture upon stored produce. Storing — best methods for various types of crop.

10. Marketing : As in Grade VI. Also cleaning and grading of produce by size and quality. Study of co-operative marketing and supply to order. Packing goods for transport—suitable for various kinds of produce and types of transport.
11. Animal Husbandry. Care of farm animals used—their housing, feeding and daily routine.

*Grade VIII.* (13—14 years)

1. Soil. Simple geological map of India—rocks and soils in different areas. Alkaline and saline soils—how to neutralise harmful elements—addition of lime, farmyard manure, green manure.
2. Levelling and bunding. Work of Grades VI and VII continued. Use and study of wooden levellers drawn by men or bullocks. Suitable heavy woods, methods of weighting.
3. Preparing the Ground : Ploughing in wet lands. Improved varieties of plough. Parallelogram of forces. Application of manures and green manures before ploughing. Correct depth of ploughing, characteristics of topsoil and subsoil and their interaction. Ploughing as an art, the beauty of a straight furrow. Types of harrows in use.
4. Manuring : Continue work of Grades VI and VII. Soil analysis, soil deficiencies and the use of chemical fertilisers as correctives. (a) nitrogenous fertilisers (b) phosphates (c) potash. Effect on growth and yield, experimental studies. The use of chemicals is an emergency measure—danger of injury to soil bacteria and interference with the nitrogen cycle in nature—they should be used only along with organic manures.
5. Propagation and Planting : The propagation of fruit trees by *gootae*, grafting and budding. The reasons for grafting, the biological principles involved, the care of grafted trees. The



transplanting of wet crops such as paddy and ragi.

6. Watering : Mechanical principles of the windmill and the pump. Rotation of the fans, principle of the screw. Wind as a natural source of power — generation of electricity by wind-power and by water-power, major hydro-electric stations in India and abroad, their advantages and disadvantages. History of irrigation and the place of rivers in the development of civilisation. Water-worship and river-worship. (See also Social Studies).
7. Weeding and Pest-control : Continue work of Grades VI and VII. Weeds whose eradication offers special difficulty — foreign weeds and pests without "natural enemies". The concept of "balance" in nature.
8. Care of crops : As in previous grades.
9. Harvesting, storing and preservation of produce : Continue work of previous grades. How to utilise hay, straw, dal-stems etc. for cattlefeed, roofing, fencing, brooms. Making haystacks. Preservation of excess vegetables and fruits by pickling, making jam, and canning. The chemical principles involved. Value of preservation for off-season use and favourable marketing.
10. Trees and forests : Their importance in the modification of temperature and rainfall, for the conservation of soil, prevention of food and the provision of timber for domestic, agricultural and industrial purposes. The care and preservation of woodland and forest — acreage needed to supply local needs. Trees of special utility and beauty. Tree-worship, tree-planting as a social duty, avenue trees and shade trees.
11. Animal husbandry : As in Grade VII.

## II. Syllabus in Spinning and Weaving as a Basic Craft.

In all grades, from the very beginning, the proper care of the implements used in the work should form an integral part of the training. From Grade I onwards, the children should be taught how to keep them clean and tidy when not in use. From the very beginning also they should be trained to recognize well-made and correctly proportioned tools. They should gradually learn to judge the quality of the implements, and from Grade IV onwards they should take part, according to their capacity, in making and repairing them. Grade IV children should be able to make and repair the small bamboo *dhanush*, and to carry out simple adjustments to the *charkha*. From Grade V onwards they should practice the repairing of spindles, and from Grade VI the preparation of gut. The older children should as far as possible make and set up their own equipment for weaving and allied processes.

*Grade I. (6—7 years)*

In areas where cotton can be grown, children can learn, with the help of the teacher, all the processes from picking cotton to winding and doubling, with the exception of carding. This should be done for them by the teacher or older pupils. Where cotton cannot be grown, the children should clean and prepare the lint for carding in place of picking and ginning.

### *Standard of work.*

Time : 400 hours (2 hours a day for 200 working days). Half may be spent in spinning, half in other processes.

Production : 40 rounds per hour or  $12\frac{1}{2}$  hanks (equal to 6 hanks of twisted yarn) for each child in the year.

Quality : Average count, 8—10.

Strength and evenness 60 per cent.

Wastage 5 per cent.

*Note:*—The *quality* of the yarn, its strength and evenness, is of far greater importance than the *quantity*. The product of the children's work should be serviceable from the beginning. Once the correct technique has been mastered, speed will

increase of itself. The children should be taught to recognize good yarn, and to count and add the rounds spun. They should also recognize a good *takli*, and should observe all the processes of cloth-making from the growing of the cotton to the finished cloth.

*Grade II. (7—8 years).*

The same activities as in Grade I, with a higher standard of attainment and a greater understanding of the reasons for the various processes. During the latter part of the course, children who have attained the necessary physical development may begin carding with the small light bow. Similarly, any child who is sufficiently developed physically may be given a *charkha* towards the end of the course. During this grade also the children should begin to keep the daily records of their individual work.

*Standard of work.*

Time : As in Grade I.

Production : Carding — 1 tola in half an hour.

Takli spinning — 80 rounds an hour.

Charkha spinning — 120 rounds an hour.

Quality : Average count 10 — 12.

Strength and evenness 60 per cent.

Maximum wastage 5 per cent.

*Grade III. (8—9 years).*

Most children in this grade can begin carding with the small bow, but the guiding factor should be the physical development of the child and not his grade placement. Spinning will be done chiefly on the *charkha* (of whatever simple type is easily available), or on *Dhanush Takli*, but the children should continue to spin regularly on the *takli* so as to maintain their efficiency.

Children in Grade III should keep their own class records of time and production, daily, weekly and monthly. They should also be taught how to calculate the count of yarn. They should understand the functions of the various parts of a *charkha* and a carding bow, and be able to recognize properly carded cotton.

*Standard of work.* (At the end of the year).

Time : As in Grades I and II.

Production : Carding including sliver-making —  $2\frac{1}{2}$  tolas an hour. Takli spinning 80 rounds an hour. Charkha spinning 160 rounds an hour. Dhanush Takli 120 rounds an hour. Year's production for each child, 5 hanks on the takli and 60 on the charkha.

Quality : Average count 12 — 16.

Evenness 70 per cent.

Minimum strength 60 per cent.

Maximum wastage 4 per cent.

*Grade IV.* (9 — 10 years).

All the processes of the craft — ginning, carding, spinning, twisting, winding and doubling should be continued in this grade with greater understanding and higher efficiency. Weaving on the simple Assamese type of loom may be introduced with advantage. This will give the children the satisfaction of producing something they can use from the yarn they spin, and will familiarise them with the whole craft of cloth-making in outline before they begin weaving on a production basis on the big loom. Handkerchiefs, napkins, towels etc may be woven.

Besides daily, weekly and monthly records for the individual and class, and the calculation of count, children of Grade IV may be taught to calculate average speed and average count for the class, and to represent these in graph form. Graphs of individual progress may also be made. They should be able to distinguish the commonest local varieties of cotton and compare the quality of yarn produced. Elementary geography of cotton in India may be introduced.

The idea of clothing self-sufficiency should be put before the children from this grade onwards. With the teacher's help they should sew their own simple garments by hand, calculate the amount of cloth and the amount of yarn required for them, and aim at producing that amount by their own spinning.

*Standard of work.* (At the end of the year).

Time : As in previous grades.

Production : Ginning with rod and plank and with the hand gin.

Carding—with small bow and yuddha pinjan— $3\frac{1}{2}$  tolas an hour.

Charkha spinning—200 rounds an hour. (640 rounds in  $3\frac{1}{2}$  hours).

Average yearly production per pupil—7 hanks on takli, 60 hanks on charkha.

Quality : Average count 16—20.

Evenness 80 per cent.

Minimum strength 60 per cent.

(Wastage should now be eliminated).

*Grade V.* (10—11 years).

Practice should be continued in all the processes and calculations carried out in Grade IV. In addition, the following may be done :—

1. Cotton picking: Life history of the cotton plant; recognition of maturity of cotton, best time and methods of picking and storing, time saved by good picking in subsequent processes. Local types of cotton—comparison of the amount and quality of yarn produced from each type. Cotton in the province, in India and the world.
2. Ginning: By the Andhra method also. Mechanics of ginning. Comparative study of the various types of equipment.
3. Carding: Combined with a bamboo knife. Mechanics of carding. Comparative study of the various equipment and methods of carding and combing.
4. Spinning. Use of the Magan charkha. Fine spinning after preparing cotton by the Andhra method. Preparing the small and large *mat* for the charkha. Elementary study of the mechanics of spinning and of the material used

for the types of charkha in use in the school or locally. Calculation of the strength and evenness of the yarn.

5. Weaving—simple calculations involved. History of the textile industry in India. Utilisation of waste yarn for tapes and carpets.
6. Sewing—estimating the amount of cloth required (in relation to the width of material) by oneself and one's family for a year. Drafting of patterns for simple garments for oneself and younger children. Cutting out economically. Sewing by hand. Making buttons and button holes. Very simple embroidery stitches. Patching and mending clothes.

*Standard of work.* (At the end of the year).

Carding : 5 tolas in an hour.

Spinning : On ordinary charkha, 640 rounds in 2 hours, count 16—20.

On Magan charkha, 640 rounds in 1 hour.

Fine spinning, 160 rounds in 1 hour.

*Introductory Notes on the Syllabus for Grades VI, VII and VIII.*

Much of what was said (on pp. 32 to 34) in the notes on agriculture as a basic craft for these grades applies also in principle to cloth-making. (i) The work must be realistic, directed to economic self-sufficiency. (ii) A thorough planning and assessment of the year's work is of the greatest educational importance in all crafts. (iii) Adequate space and equipment must be provided for all the children to be productively occupied. (iv) Records of work, daily and monthly, must be fully and scientifically maintained. (v) The greatest possible use must be made of traditional knowledge embodied in proverbs, sayings and local practices.

One or other of the associated crafts should be practised by the children wherever possible. Sewing may be developed as tailoring or dress-making, with the use of the sewing machine. Gifted children may take up design, either for embroidery or for block-printing or stencilling.

Knitting may be taught, especially in those areas where wool is spun and woven in the basic craft, or where knitted garments in wool or cotton are suited to the climate. Mat and carpet-making are also possible, and rope-making and coir work.

The pupils of Grade VI should first gain familiarity with the various processes of weaving on the large looms by helping pupils of Grade VII and VIII. The craft-work should be so organised that all the pupils of these three grades co-operate on the unit of work—the production of cloth.

The syllabus of weaving outlined here has been divided class-wise tentatively, but every pupil will proceed according to his or her individual ability. No standard of speed in the various processes has been mentioned as it depends upon the quality of yarn. The mention of punjam also does not restrict the scope of work but only defines common standards as accepted today. It is not necessary to abide by the punjam mentioned. The teacher's discretion, the condition, strength and number of the yarn and the capacity of the children should be the deciding factors.

In addition to the actual work of production and study in school as detailed below, pupils of Grade VI may take responsibility for maintaining the store of craft equipment and material for the whole school. In Grades VII and VIII they may prepare estimates for the cloth requirements of their families and the village, and take part in the programme of self-sufficiency in clothing for the village as a whole.

*Grade VI.* (Age 11—12 years).

When the pupils of Grade VI become sufficiently familiar with the process of weaving, they should begin regular weaving on the type of loom used in the locality with necessary improvements for efficiency and quality of work.

*Standard of production:* In dubeta or double-warp weaving, 24 yards, 27 inches wide and 7½ punjams. Either coating for shorts or towel-cloth with and without border.

*Planning :* Preliminary calculations of the cloth to be woven with reference to the following points :—

1. Classification of cloth to be woven, quality, dimensions and use.
2. Raw material required, calculations necessary from cotton to cloth, percentage of wastage.
3. Yarn — count of yarn and number of hanks needed.
4. Time and equipment.

*Craft Processes :*

1. Growing and picking cotton. Structure of the cotton flower — growth, development and structure of the fruit — the purpose of lint in the fruit. Production of cotton per acre. Problems in time, work and speed.
2. Drying and storing. Percentage loss of weight in drying. Local methods of storing — possible improvements — advantages and disadvantages of various types of bins.
3. Cleaning and ginning. Common impurities. Fibre-seed ratio and percentage. Adhesion of fibre to seed.
4. Carding. Effect of humidity on the gut and the quality of carding. Principles involved in gut-making, elasticity and tensile strength.
5. Spinning. Correct posture and motion to avoid fatigue. Constancy of speed. Winding on the *lapeta* — the proper tension, how to help the weaver. The wheels — circles, diameter-radius ratio. Principle of the *mal* — relation between radius of the wheel and speed of revolution.
6. Selecting and sorting yarn — properties of good yarn — twist. Effect of storing on condition of yarn. Average count, dealing the *punjam* and selecting the reed.
7. Doubling. Why dubeta ? Elimination of waste. Count of yarn after doubling, twist count and average count. Effect on yarn strength. Why



twist counter-clockwise? Types of dubeta charkhas and their efficiency.

8. Winding and unwinding. Transmission of force, centrifugal force, centre of gravity. Why wet the yarn?
9. Piecing. Why use ashes? Other things we can use. The mill knot, the use of glue for dubeta. Why should the ends be "kachcha"?
10. Warping — spreading and distributing.
11. Sizing — the correct motion — the preparation of different sizing-mixtures — the effect of sizing.
12. Weaving — parts of a loom — materials and proportions.
13. Finishing — the principles and process of bleaching.

*Grades VII and VIII. (12 — 14 years).*

1. Double warp weaving continued.
2. Single-yarn weaving: Dhoties, saris with coloured borders, shirtings, plain, striped and checks.
3. Utilisation of waste-yarn.
4. Weaving of tapes, carpets and small *asans*.
5. Weaving on the hand-shuttle loom.
6. Weaving of fine yarn, if possible.
7. Weaving of wool and silk may also be introduced where it is the local industry.

*Processes : Fitting of a loom.*

Repairs of the parts of the loom.

Acquaintance with the carpenter's tools.

Making of loom-parts with locally available material.

Tying the heddle, twisting the heddle ropes.

Making the reed for specification.

Bleaching — with indigenous methods.

Dyeing, with vegetable dyes, locally available.

Designing (boys should be encouraged to make their own designs).

Acquaintance with the processes and equipment of weaving in other parts of India.

*N. B.*—The entire syllabus of the processes from cotton to cloth should be revised during the last three months of the eighth grade.

### **III. Syllabus in Wood-work and Metal-work as a Basic Craft.**

*Grades VI, VII and VIII only.*

Where this is selected as the basic craft the same principles of self-sufficiency must operate as in all other basic crafts. The practical work should be so planned that the articles made in the school will find a ready sale either in the school itself or in the local market. The following types are suggested ; in each type the simplest models should be taken up first and the pupils proceed to more difficult models as their skill increases.

- (a) The implements used in all the processes of spinning and weaving.
- (b) Implements and tools for gardening and agriculture.
- (c) Tools for carpentry.
- (d) Articles of common household furniture and equipment — pegs, racks and shelves, *charpoy*s and wooden seats, tables, boxes, cupboards, frames for mirrors or pictures, window-frames, gates, sandals etc.
- (e) Articles needed in school — penholders, rulers, scales, desks, boxes, bookshelves etc.
- (f) Metal objects such as garden tools, knives, scissors, pruning shears, nails, screws, bolts, hasps and hinges, lamp and candle brackets etc.

*Note:*—The tools and equipment used in the school carpentry or smithy should be of a type easily available in the village, and any modifications for improved efficiency should be such as can be carried out in ordinary working conditions.

The work of each grade will be developed along the following lines.

1. Plan for the year's programme.

Choice of models to be executed, calculation of the nature and amount of raw materials needed, tools and equipment necessary, time to be expended, most efficient organisation of

labour. Estimates of cost of production and value of articles produced, use of scrap and waste material. Assessment of work after completion on these lines.

2. Accurate measurements and calculations of length, area and volume. Execution of accurate drawings to scale of the models to be made.
3. Sources of raw materials.

(a) Wood :

Study of growing trees—their propagation and care—the structure and formation of wood—proper time for felling.

Common trees of the locality and their uses—timber trees—soft and hard woods—recognition of various common timbers.

Forest regions of India and the world—subsidiary forest products other than timber—the paper industry.

(b) Metals :

The common metals in daily use—metallic ores in India and the world—smelting of iron—extraction of copper and zinc.

(c) General :

Systems of weight and measurement used—density and specific gravity of substances.

4. Treatment of Raw Material.

(a) Wood :

Seasoning—the sap—shrinking and warping—purpose and methods of seasoning.

(b) Metals :

Cast iron, wrought iron and steel—their preparation and properties. Brass—an alloy of zinc and copper.

(c) General :

The proper storing of all raw materials—protection of wood from white ants etc.

5. Study of tools.

Their parts and proportions—materials used—function of the various parts. Care of tools

—greasing, the nature of rust, oxidation of metals. Oiling and sharpening—principle of friction, files and stones. How to keep tools when not in use.

6. Working the materials.

Physical and mechanical principles underlying the various processes. The generation of heat—principles of the furnace and bellows, melting points of solids, conversion of wood into charcoal.

7. Finishing and preservation of articles. Glue—how to make and use it. Polish, where and why necessary, methods of polishing, preparation of polish. Paint—composition of paint, value of paint, how to make and use it, preparation of brushes. Tar—its composition, purpose of tarring.

8. *Maintenance of records and accounts.* Store book, account books, records of daily work, balance sheet of costs and production etc.

**D. Syllabus in General Elementary Science.**

The purpose of the syllabus in General Science is to stimulate the spirit of enquiry, to form habits of accurate observation and accurate statement, and to give the pupils an intelligent understanding of the phenomena of nature and the inventions and discoveries of man. In the higher grades the pupils should begin to understand what is meant by "a scientific attitude" to all problems of life, and its social and moral implications. (See Chapter I).

General science should not however be regarded as a separate school "subject". If scientific teaching is to fulfil its purpose it must be integrated with the activities and interests of daily life. The programme of work in cleanliness and health, in the preparation of food and care of the sick, in the upkeep of buildings and appliances and in the practice of the basic crafts, is filled with opportunities for the teaching of scientific principles, and many of these are indicated in the relevant sections of the syllabus. *Every* item of scientific information should be introduced

in this way, when the interest is lively and the need apparent.

Children with keen special interests should be encouraged to pursue scientific hobbies of all kinds in their free time. Bird-watching, collecting wild flowers, stargazing, model-building and many others stimulate a spirit of disinterested curiosity and may be a source of life-long interest and pleasure.

The syllabus which follows may look heavy, but it must be emphasized once more that it is not a separate "lesson"; it is merely a repetition, in a convenient form for reference, of the principles which must be made explicit in the course of daily activities, if these are to have their full educational value. It attempts to indicate which items in this vast field of knowledge may usefully be introduced at the various stages of education, having regard to the mental development of the child. The particular context in which any one item is taught may and should vary widely, both because different basic crafts will present different opportunities and examples, and because a good teacher will always be ready to use unplanned and unforeseen openings afforded by the children's questions and comments. Nevertheless it is obvious that certain subjects, such as the concept of the atom or of the transformation of energy, need a comparatively mature mind to grasp them, whereas much younger children can be fascinated by the exciting but mysterious properties of a magnet or the protective mimicry of many living things. Subject to such natural limitations, however, the syllabus should be regarded as elastic. It is also somewhat incomplete in so far as a few topics — such as nutrition and the classification of foods — have been definitely allotted to the health syllabus and are not repeated here.

The older children should certainly know something of the world's greatest scientists and their achievements. For convenience this has been included in the syllabus of Social Studies, but would be equally appropriate here.

*Grade I. (6 — 7 years).*

Much of the knowledge for this grade is incorporated

in the suggestions for observation for Grades I to III in the gardening syllabus (p. 28-29). In addition the following may be included :

1. Sunrise and sunset, the dark and bright periods of the month, eclipses (if any) and rainbows.
2. A simple class weather chart for a month, showing sunshine, cloud, rain and wind. A month should be chosen during which weather variations are likely to be numerous and interesting.
3. Observation and discussion of crafts and industries of the neighbourhood.

*Grade II.* (7 — 8 years).

The work of Grade I should be continued. Changes of season, and their effect on the growth of plants, may be noted in a very simple way. The sun rises in the *east* and sets in the *west*. So does the moon.

*Grade III.* (8 — 9 years).

1. Continue the work of the previous grades.
2. The six seasons, names and characteristics. Times of sunrise and sunset at each season, showing variation during year.
3. The moon — watch daily for a month to observe change of shape and position on the consecutive days.
4. The four points of the compass. The pole-star and the Southern Cross (where visible). Stars also rise and set.
5. Physical properties of common substances — light and heavy, rough and smooth, floats and sinks, gets hot and cold easily or not.

*Grade IV.* (9 — 10 years).

1. Maintain a "nature diary" of birds, animals, insects, wild flowers, weather notes etc.
2. Watch the sun's daily "movement" round the sky in relation to angle and length of the

shadow cast by an upright pole. Make a simple Sun-dial. (Winter is the best season for this).

3. Eight points of the compass — recording the direction of the wind — reading wind-vane.
4. How to find the North from the Great Bear (Sapta Rishi) constellation. The magnet and the mariner's needle.
5. The rotation of the earth, cause of day and night.
6. How we get paper and salt.

*Grade V. (10 — 11 years).*

1. Nature diary continued.  
This should include observation of the adaptation of animals and birds etc. to different habitats, climates, and food-supplies, and how they protect themselves from enemies by colour, mimicry or poison.
2. Revolution of the earth round the sun and the moon round the earth. How the sun gives light to the moon. The other planets — identify Venus, Mars, Jupiter.
3. Height of the sun at different seasons by measuring noon shadow.
4. Air — the need of air for burning (kitchen fire); the difference between air breathed in and breathed out (ventilation).
5. Building materials in local use (stone, wood, earth, bamboo) in connection with healthy housing.
6. The three states of matter, solid, liquid, gaseous, illustrated from water. How steam drives an engine (elementary).
7. Absorption and evaporation of moisture (healthy clothing, watering the garden).
8. How light and sound travel — echoes. Light travels faster than sound — thunder and lightning, etc.
9. The wheel and axle, man's great discovery. The principle of the fly wheel in the takli etc.

*Grade VI.* (11 — 12 years).

1. Life history of a few selected cereals, vegetables and fruits from garden records.
2. Simple classification of animals : invertebrates (insects, worms etc.) vertebrates (mammals, birds, reptiles, fish) oviparous and viviparous. Elementary knowledge of similarities and differences between animals and plants (movement, food, reproduction).
3. Air — has weight — air pressure and the barometer, oxygen and  $\text{CO}_2$  — the respiration of plants and animals — exchange of gases in the lungs — combustion and digestion.
4. Water — physical properties — finds its level — irrigation channels, water falls and water-wheels. Water level and spirit level. Solutions (as plant food), saturated solutions and crystals. Evaporation and condensation — dew.
5. Light — natural sources — travels in a straight line — shadows — umbra and penumbra. Eclipses. Inclination of earth's axis — significance of equator and tropics — record of midday sun shadows showing movement to the north.
6. Heat — generation and measurement of heat — fire in the history of civilisation. The match-box. Friction and lubrication.
7. Some common examples of acids and alkalis (digestive process) and of elements, compounds and mixtures.
8. The sources of petroleum and crude oil — gardening, lighting, power.
9. Mechanism of the pulley, block-and-tackle (well and bucket etc.).

*Grade VII.* (12 — 13 years).

1. The story of the earth : its origin. The force of gravity — the moon and tides. Formation of rocks, seas, soil. Life and the story of evolution (outline). The sun is a star, the stars. Recognition of some well-known constellations.



2. Adaptation of plants to various conditions of soil, water, light and temperature, and for self-defence. Thorus and other specialised modifications of leaf, stem etc.
3. The importance and work of bacteria, beneficial and harmful. Decomposition and putrefaction.
4. Air—oxygen, nitrogen, CO<sub>2</sub>, water vapour. Rust and oxidation. Properties and preparation of oxygen, CO<sub>2</sub> and nitrogen.
5. Heat, combustion and expansion. Principle of the thermometer and clinical thermometer. Household applications.
6. Sound—the ear and hearing. The voice—vocal chords—vibrations—the carding bow—musical instruments. Tension of gut etc.
7. Common metals, their properties and uses. Cast iron, wrought iron, steel, copper and alloys such as brass, bronze and bell-metal.
8. Building materials: bricks, tiles, lime mortar, cement-concrete, glass.
9. Further examples of common acids and alkalis, elements, compounds and mixtures. How to make soap and preserve wood.
10. Mechanical devices: Various joints—hinge, ball and socket, pivot, principles of the syringe, lever, gear, wedge and inclined plane. Centre of gravity—stable and unstable equilibrium.

*Grade VIII. (13—14 years).*

1. The sun, moon, and signs of the zodiac. The origin and history of calendars—solar and lunar months and years. Sunspots, meteors, and comets.
2. The sun as the source of energy—how it is stored by green plants—chlorophyll—respiration and the release of energy—transformation of energy as heat, light, electric and mechanical force.
3. Heat, its transmission—conduction, convec-

tion, radiation. The principle of a thermos flask.

4. Light — reflection in plane mirrors, refraction, the rainbow. The convex lens, magnifying glass, camera lens. Structure of the eye. Long sight, short sight and the principle of spectacles. Artificial light — how a petromax works, meaning of "candle power".
5. Air. Wind as a source of power — windmills. Electricity generated by wind or water. Electric battery, current, dynamo, motor. Uses of electric power.
6. The structure of matter — elements, compounds, and mixtures continued. Molecules and atoms — the release of atomic energy.
7. The parallelogram of forces. Centrifugal and centripetal force. Major wind and water currents, trade winds and monsoon.
8. Classification of plants — flowering plants, ferns and mosses, fungi, algae and bacteria. Biology of saprophytes and parasites. The inter-dependence of living things.
9. The fermentation of sugars — oil as a preservative — the principles of pickling, preserving and canning.

#### **E. Citizenship and Social Studies.**

##### **1. *Fundamental aims:***

It is the fundamental aim of basic education to fit the individual for the responsibilities of citizenship. (See Chapter I). His habits and attitudes are of far more importance to the success of this aim than the extent of his factual information, and it follows that there is no branch of school activity which may not form part of this training. Personal cleanliness and health is not merely a duty to oneself, it is a duty to society. The whole syllabus in cleanliness of the environment, and in the elements of public health and medicine, is an important part of practical training in citizenship. Knowledge of scientific principles and skill in basic crafts are not imparted for

the benefit of the individual alone, but are meant to be applied consciously and deliberately, as the relevant syllabuses show, for the benefit of one's family and of local society, especially by the pupils of the higher grades. Even the recreative pursuits, and the appreciation of art and beauty, are essentially social in their nature, and are closely linked with the cultural achievements of mankind. All these are in a sense "social studies". But the sense of social responsibility with regard to them is best learned not so much by formal teaching as by spontaneous imitation of the attitude and example of the teacher. Given teachers whose own sense of social responsibility is keen, the children should have learned by the end of the course what the social and moral ideals of *Nai Talim* are and how their own school activities are related to them.

2. *Specific objectives and methods of work :*

The objectives are set out under Section 5 of the Standards of Attainment described in Chapter II ("capacity for the responsibility of citizenship ; " p. 11). The detailed syllabus indicates the type of work which should be planned to attain this standard. Essentially, it is *the practice and study of human relationships* — how men supply their physical, social and spiritual needs through various economic, governmental and cultural activities, how and why they co-operate or compete with one another, and how the conditions of human life have been determined and modified during history. Human geography and history must therefore be taught as the story of mankind, not as a mere chronicle of physical facts, past events, and the names of cities and kings. The emphasis, both in Indian and world history, should be on the motives that shape events and the great personalities who have influenced the life and thought of mankind. The biographies of saints, thinkers, artists, scientists, and explorers, as well as political leaders and the heroes of great social reforms, should form an important aspect of social studies.

3. *Practical Activities :*

- (i) Class and School Assemblies. Training in

responsibility, individual and collective, can best be given through the organisation of a children's assembly and the election of ministers to take responsibility for various tasks. The foundation should be laid from the very beginning. Children of Grades I and II can, with the help of the teacher, take responsibility for such things as :

- (a) Daily cleanliness programme.
- (b) Neat and orderly arrangement of material for spinning, gardening and games.
- (c) Serving meals and cleaning the eating-place.
- (d) Seating arrangements for school prayers.
- (e) Care of drinking water.
- (f) Helping new pupils.
- (g) Helping in entertainments and festivals at school.

Each class should be organised in this way as a democratic family community, with the teacher as an elder brother or sister, and should plan the distribution of work and responsibilities according to its own needs. The "family" feeling should secure consideration for weaker members and the equal status of boys and girls. As the children grow older the class assembly should shoulder more and more responsibility, and should be the starting point for study of other self-governing bodies, local and national.

The school assembly should take similar responsibility in matters affecting the school as a whole, in relationships between class and class, and with other schools in the neighbourhood. Its constitution and rules of procedure, the functions of its cabinet of ministers, their tenure of office, the provision for the maintenance of discipline, can be educational materials of the greatest value. The proper conduct of meetings, the discussion of plans, the reception of ministerial reports, the exercise of the vote, the record of proceedings, will all help to form good civic habits of fair play, the patient appraisal and adjustment of differing points of view, and loyalty to majority decisions.

(ii) The school assembly may organise a School Co-operative Store. Just as class and school assemblies will educate in the basic principles of democracy, so a

properly run School Co-operative Store can educate them, in the basic principles of co-operation. Besides giving useful practice in record keeping and accounting, it can demonstrate the vital need of moral integrity and personal reliability in all forms of public service.

(iii) Newspaper reading and the discussion of current events.

This may be begun in its simplest form in Grade IV and should be continued and developed in all subsequent grades. A map of India and a large map or globe of the world should be kept ready for reference. For the younger children the teacher should select suitable items of news; the older pupils should be trained to read for themselves and to select items for class discussion in consultation with the teacher. Daily readings and weekly discussions will normally be satisfactory.

Newspaper reading should be the starting-point for study of current social, economic, political and cultural problems in India and the world. Discussions must supply the necessary back-ground for understanding day-to-day happenings, and must be varied in interest. Here are a few illustrations of what may be done :—

**Social :** Prohibition news — why men drink — local conditions — scientific, social and political aspects of the drink problem.

**Economic :** An international trade pact — back-ground in the countries concerned.

**Political :** Local or national elections — programmes of different parties, securing fair play.

**Cultural :** A well-known leader visits a foreign country — study of its culture.

The presentation must be objective, and the essentials of each problem and situation must be given in their simplest form. In Grades VII and VIII special attention should be paid to forces and organisations working to eradicate exploitation and secure international justice and peace. Children should come to regard themselves as world citizens as well as citizens of a particular village, town, state and nation.

(iv) Celebration of festivals may also be planned by the school assembly. These may include regional, national and social festivals, representative holidays of the great world religions, commemorations of great men or special undertakings such as an Animal Day, Tree-planting Day or World Peace Day. Much of the material in the programme of studies can be introduced in preparation for these festivals. The children of each grade should contribute to the celebration in a way suitable for their age-level as indicated in the detailed syllabus.

#### 4. *Programme of Studies.*

*Grades I and II. (6 — 8 years).*

The syllabus in these grades is almost entirely practical in its emphasis. It is a training in acceptable social behaviour.

*Grades I and II (6 — 8 years).*

##### I. *Practical training in social behaviour.*

###### (i) General :

- (a) Methods of greeting older people, younger people, and casual visitors and guests.
- (b) How to treat younger brothers and sisters at home and younger children at school.
- (c) How to stand, sit and talk in a meeting, in a crowd.
- (d) Not to interrupt when others are speaking.
- (e) Not to pass between two people when they are talking to one another.
- (f) Not to block the way.
- (g) Not to shout when talking.
- (h) Not to use bad language.
- (i) Asking and answering questions politely.
- (j) Waiting for one's turn in speaking.
- (k) Making use of the queue system.
- (l) Not to take other people's things without asking.

(ii) In eating : If there is provision for a meal in the basic school, all the processes connected with cooking and serving of the food, cleanliness of the place of eating, cooking etc., can be used for giving social training :

- (a) Sitting in an orderly and peaceful manner for eating.
- (b) Waiting for one's turn.
- (c) Taking only as much food as is required.
- (d) If there is only a little, sharing it fairly.
- (e) Eating nicely.
- (f) Cleaning and putting away eating and serving utensils.
- (iii) In craft :
  - (a) Proper use of craft materials and equipment.
  - (b) Sharing material and equipment with others.
  - (c) Waiting for one's turn.
  - (d) Working in groups.
  - (e) Leaving the class-room clean and replacing the material and equipment in proper order after work.
- (iv) In Play :
  - (a) Fair play. Not to take advantage of another's weakness.
  - (b) Inviting other children to come and play.
- (v) In the Home :
  - (a) Helping parents.
  - (b) Looking after younger brothers and sisters.
  - (c) Helping to keep house and environment clean.
  - (d) Helping to look after family cattle and poultry.
  - (e) Helping to look after and guard fields.
  - (f) Looking after guests.

## II. *Observation of local social life :*

Food, clothing, housing, occupations, water-supply, bazaar, post-office, places of worship, fairs, festivals and entertainments. (cf syllabus in General-Science).

## III. *Stories of other regions and customs :*

Children who live in a way different from ours — e. g., nomads (desert or steppe), hunters (forest), fishers (coast and island), farmers in other (colder) climates etc.

*Grade III.* (8 — 9 years).

## *Social Training.*

The general social training outlined for Grades I and II will be continued in this and higher grades until good habits are formed.

### *Social Studies.*

1. The locality. Other villages within easy reach, their direction and how to get there; the nearest market town. The local bus routes, the destination of railway trains from the local station. Where things in the local bazaar come from. Historical sites, if any, in the immediate vicinity and stories connected with them.
2. The idea of a map — reproducing the same shape in a smaller size. Very simple idea of scale drawing — diagrams of class-room, school local roads and villages etc.
3. The world — shaped like a ball. The globe, land and water on the globe, position and shape of India. General description of India — mountain, river, plateau, desert and coastal areas (with a relief map if possible). Position of our own village in India.
4. Social organisations. The Post office and how letters are sent all over the world by various means. The village officers and the village *panchayat*. Doctors and medical aid. Care of animals and kindness to animals.
5. Stories. Stories of life in different countries (continued) and of children long ago (beginnings of history). Stories from the Epics, Puranas, Bible and Quran in connection with the celebration of festivals etc.

### *Grade IV. (9 — 10 years).*

1. The map and globe. Continued practice in reading maps and simple drawing to scale (correlated with mathematics). Orientation of maps. Colour conventions — meaning of shades of brown, green and blue.
2. Local knowledge. Extend from the immediate vicinity to the District. Its produce, industries, handicrafts (starting from cotton and cloth industry), rivers, roads, railways, centres of pilgrimage, history and historical sites.



An introduction (correlated with spinning and gardening) to the economic geography of the State and of India.

Extent of self-sufficiency in food and clothing in the village, district, state and India.

Elementary knowledge of how district, state and India are governed. Function of the police.

3. Stories from history, planned round local sites of interest and local and national festivals.

Emphasize :

- (a) Social and cultural history, beginning from the Cave men and the Stone Age.
  - (b) Rulers who made *positive* contributions to Indian life and culture.
  - (c) Dealings of the Indian people with other countries as traders, explorers, settlers, pilgrims etc., and visits from other countries.
4. The study of current events (see p. 60) will begin in this grade.

**Grade V.** (10 — 11 years).

1. The map and globe. Idea of contour and of latitude and longitude, the equator and the tropics. Simple idea of the effect of geography on industry and communications — why cities, towns and villages group up at certain sites and roads follow certain routes.
2. (Closely connected with the above). Simple outline of the economic geography of the world starting from cotton and agriculture and including the main trade routes, present and past.
3. The food, mineral wealth, crafts and industries, population and communications of India. Famine and its prevention. Local self-sufficiency and world resources — mankind as one family.
4. Stories from Indian history continued, building up a simple chronological picture by means of (e. g.) a time-line. Include (also on time-line) :

- (a) Major ancient and modern civilisations influencing India (Chinese, Greek, Islamic, Western European etc.).
- (b) The chief religions of India and how they arose here. Some stories of founders, teachers and sacred places, and of saints who worked for brotherhood and charity in religion.

*Note:* From this grade onwards children should be encouraged to read for themselves and the library should contain as much interesting and suitable historical and geographical material as possible.

### *Grades VI, VII and VIII.*

During these three grades the subject-matter of study should be so planned as to cover the following :

1. The main outlines of the history of India — social, cultural, religious, political and economic.

This should include :—

- (a) India's relationship with other countries from early times.
- (b) The chief countries with which India has economic relationships today (beginning from the wares in the local market).
- (c) One's own locality and its relationship with other regions of India and the world.
2. An outline of the story of mankind :
  - (a) How man has obtained his physical necessities at different times and places — food, clothing, shelter, tools, amenities.
  - (b) How man has satisfied his social, cultural and spiritual needs :
    - His social organisations.
    - His religious traditions.
    - His music, drama and other cultural activities and amusements.
  - (c) How the human race has been drawn together into one family by the development of trade, communications and travel.

The contributions made by the various groups, societies and communities to the welfare of the human family. The part played by science in the development of one world.

- (d) An outline of the political and economic geography and the international organisations of the world today.

The syllabus given below shows *one possible* way of dividing the subject-matter between the three grades. It is not by any means the only way ; it is not necessarily the best way in every case, and teachers should feel free to re-allocate topics according to circumstances, interest and convenience.

*Grade VI. (11 — 12 years).*

*A. Man and his environment.*

(The work of Grade V and previously acquired information will be reviewed and consolidated to show how man supplies his physical needs in various regions and from various natural resources).

1. Life in forest areas. (a) Tropical forests, in India, Africa, South America and Malaya. (b) Temperate forests in Canada and Russia.
2. Life in deserts : (a) Hot deserts — Rajputana, Arabia, the Sahara. (b) Cold deserts, — the Tundras.
3. Life by the sea. The West Coast of India, the Pacific Islands.
4. Life in river basins. India, Burma, China, Mesopotamia.
5. Life in Grasslands (steppes). South Russia, North and South America, South Africa.
6. Food-crop areas in India and world. Millet areas (*jawar, bazra, ragi* etc.), maize, barley, rice, wheat, and sugarcane areas in India and the world.
7. Fibre for clothing etc. Cotton, wool, silk, flax, hemp and jute areas in India and the world.
8. Coal and iron areas in India and the world.
9. Mineral Oil areas in India and the world.

10. Water-power areas in India and the world.

*Note:* The part played by scientific inventions and discoveries in agricultural and industrial production and manufacture should be noted.

*B. Man and communications.*

1. Paths and tracks, rivers, canals and the sea. Roads for wheeled traffic and motors. Railways and air-routes. Discoveries and inventions which help man to find his way.

2. Vehicles used by men through the ages on land, water and air. Science and the speed of travel.

3. Travellers through the ages.

(a) Merchants: The Arabs, the merchants of Gujarat, Malabar and the Coromandel Coast, the Portuguese, Dutch, French and English.

(b) Religious teachers and pilgrims, Hindu, Buddhist, Christian and Muslim. (Stories of selected examples).

(c) Fighters and adventurers by land and sea. e.g. Alexander, Timurlane, Md. Ghazni, the pirates of the Arabian Sea, the Spaniards in the New World, Drake).

(d) Observers and explorers. (e.g. Ibn Batuta, Marcopolo, Vasco da Gama, Cook, Livingstone etc.).

4. Inventions for the communication of ideas—languages, signalling, writing, the story of books, the printing press, telegraph, telephones, radio, television.

*Note:* In connection with the story of books children of this grade may be introduced to great passages in the scriptures of the world religions, through translations in their own language. (See also practical work (iv) the celebration of festivals).

*Grade VII. (12—13 years).*

*A. The Growth of Civilisations.*

A study of the development of various types of civilisation with special reference to Indian history. Cultural achievements should be emphasized throughout.

1. Growth of the earliest civilisations in the most

favourable environment, the river valleys.

Some examples of river civilisations :

Egyptian in the Nile Valley.

Babylonian in Mesopotamia.

Chinese on the Yellow River.

2. Study of Indian river civilisations and the early history of India connected with them.

Mohenjodaro - Harappa in the Indus basin.

Aryan civilisation on the Indo-Gangetic plain.

Dravidian civilisation on the Kaveri.

3. Maritime — Mercantile civilisations.

The Phoenicians, the Arabs.

Mercantile communities of Buddhist and mediaeval India, and of Islam.

4. Empires, a synthesis of cultures.

The Persian Empire and Alexander.

The Roman Empire.

The Muslim Empire in India.

5. Mercantile— industrial civilisations.

Mercantile communities of West Europe, their impact on India.

The " British Period " in Indian history.

The Industrial Revolution and its consequences in (a) West Europe, (b) Japan, (c) India.

Industrial imperialism.

6. The future of civilisation. Possible trends.

The ideal of *Sarvodaya Samskriti*.

#### *B. The contribution of Religion to World Culture.*

The great religions of the world and their founders studied in their historical setting, with emphasis on the contribution they have made to the ethical and cultural advancement of the people who adopted them. The study may be closely related to the study of the various civilisations. e. g. as follows :

Egyptian civilisation — Moses and the Jews.

Babylonian civilisation — Zarathustra.

Chinese civilisation — Confucius and Lao Tse.

Aryan civilisation — the Vedic religion,  
Gautama the Buddha and Mahavira.  
Roman Empire — Jesus the Christ.  
The Arabs — Mahommed the Prophet.

*Grade VIII.* (13 — 14 years).

*Social and Political Organisations.*

A study of the social and political institutions of mankind with special reference to India.

*Note:* Throughout this study, the following mutually related themes will constantly recur if the subject is properly handled:

- (a) The tension between centralizing and decentralizing tendencies in society.
- (b) The tension between democratic and totalitarian forms of government.
- (c) The tension between ideals of liberty and various forms of slavery and exploitation.
- (d) The rule of law and the rule of force.

These must of course be treated in the simplest possible way, largely through biographies of those who fought injustice.

1. The most primitive societies, the family, clan and tribe. Patriarchy, matriarchy, and primitive communism.
2. Early kingdoms and republics in India and abroad. Hindu, Chinese and Egyptian kingdoms: the Sakyas, Luchavis, Mallas, and the Greek republics.
3. Early empires, their growth and administration — the Persian, Mauryan, Roman, Gupta and Moghul empires.
4. Feudal society and trade guilds. Examples in Buddhist and mediaeval India and in mediaeval Europe.
5. Nationalism and democracy in the West — the evolution of democratic nation-states in England, the United States, France (the Revolution), China, etc. Influence of democratic ideals on struggles for the abolition of slavery, prison reform, the rights of women etc., and on Indian political development.
6. Capitalist Industrial Society — the struggle for raw materials and markets — industrial

imperialism and the exploitation of Asia and Africa. Industrial imperialism and the first world war (1914—1918).

7. Socialism as a world force—the demand for economic justice—experiments in Christian socialism—the Soviet social revolution and industrial socialism.
8. Fascism, communism and the planned “welfare-state”. The Second World War (1939—1945) and its aftermath. National and world government. The power of modern scientific knowledge for the service for the destruction of humanity.

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#### **F. Mastery of Language and Number.**

##### *I. Use of the mother-tongue or regional language.*

(Whichever is the medium of instruction).

- Notes:* (i) Special methods may be needed during the first two or three years of school life for the minority of children whose mother-tongue is not the medium of instruction, or is a non-literary dialect of the regional language.
- (ii) Language is the essential medium of communication in every activity. Its study is therefore closely correlated with every side of school life.
  - (iii) The use of language for literature, and the appreciation of literature, are dealt with in Section G.

##### *Grade I. (6—7 years).*

1. Oral self-expression. The children should be trained and encouraged in clear easy speech and correct pronunciation. The following activities will be helpful:—
  - (a) Telling the news about events at home and in the village.
  - (b) Practice in an increasing vocabulary about school activities, home life and village occupations. The children should learn the correct words for implements and processes used.
  - (c) Stories of all kinds told by the teacher and also by the children. Much story-material

is furnished by all the activities in the daily programme, especially by social studies ; nature-stories, folk-tales and fables, stories of children in other lands, and pure " nonsense " stories, may all be included.

- (d) Poems, simple but of literary merit. Recitation, action-songs and dramatisation.

2. Reading and writing.

To be begun in connection with the various activities of the daily programme.

*Grade II.* (7 — 8 years).

The main activities should be the same as in Grade I but the following standard should be aimed at :—

1. Oral self-expression.

- (a) To describe clearly and fully the objects, people and events within their own experience.

- (b) Command of a more extended vocabulary.

- (c) A greater power of continuous narration in story-telling.

2. Reading and writing.

- (a) Reading very short and simple stories.

- (b) Keeping a daily diary in simple words and short sentences.

*Grade III.* (8 — 9 years).

1. Oral self-expression.

The programme of Grades I and II should be continued and developed in all its aspects. Recitations, dialogues and dramas should be encouraged.

2. Reading.

- (a) Practice in reading aloud from simple material, including the children's own diaries and records, with clear pronunciation and reasonable fluency.

- (b) Silent reading of simple books. The children should be encouraged to read freely from a class library. It is important



that the books should not be too difficult, so that they may read with ease and pleasure.

3. Writing.

(a) Maintaining a daily diary.

(b) Writing descriptions of things seen or done, and short stories.

(c) Dictation of short sentences.

*Grade IV.* (9 — 10 years).

1. Oral self-expression.

In addition to the type of activities outlined for the previous grades, which should be continued, children of this grade should begin to take an active part in the work of the class and school assemblies. Questions and discussions on newspaper reading will also provide good training.

2. Reading.

Children's magazines, books about school activities and the correlated studies, general books and story books from the library. Practice in good reading aloud (of reports, news etc.) should also be continued.

3. Writing.

(a) Daily and monthly diaries, plans and records of work.

(b) Writing from dictation.

(c) Simple letters — friendly and business.

(d) Original writing — e. g., for a class or school magazine or for literary meetings.

*Grade V.* (10 — 11 years).

1. Oral self-expression.

Grades I — IV syllabus continued. The children should now be able to present orally a plan or report of a piece of work to the class or school assembly.

2. Reading.

Grade IV Syllabus continued.

The children should be taught how to use books

(technical and general), magazines and newspapers to obtain particular pieces of information which they need :—

- (a) how to use a simple dictionary
- (b) how to consult a List of Contents and an Index.

3. Writing.

- (a) Daily diaries, monthly, quarterly (or termly), and yearly reports of work.
- (b) Plans and reports for special activities and programmes in connection with all parts of the school syllabus, and with excursions, festivals, and entertainments.
- (c) Summaries of daily news and weather reports.
- (d) Letter-writing continued.
- (e) Charts and material for exhibition (twice in the year).
- (f) A class or junior school magazine.
- (g) Dialogues and dramas on topics from social studies, the health programme etc., for production at class literary meetings or school entertainments.

*Grades VI, VII and VIII. (12 — 14 years).*

1. 'Oral self-expression.

The programme outlined for the first five Grades should be continued in all its aspects, and a progressively higher standard of clarity, fluency, and accuracy of speech should be set. Debates, discussions, short impromptu speeches (on both serious and humorous topics), exposition of problems of topical interest from newspapers and magazines, and the preparation and delivery of well-arranged talks (e.g. at meetings and entertainments for the villagers) should all form part of the training in the mastery of language. The production of plays by a dramatic club is also of great value.

## 2. Reading.

The objectives mentioned in Grade V syllabus continue to hold good. The children should be trained to obtain whatever information they need in the course of their school activities or hobbies by consulting a variety of books, magazines and technical journals. They should acquire increased proficiency in the use of dictionaries, lists of contents and indexes, and should learn to use encyclopaedias and simple bibliographies. At first they will need guidance and help but should work more independently in the senior grades.

Under the guidance of a teacher-librarian children of these grades may care for and run the school library. Ideally, this should also serve as a public library for the village as a whole, and the care of it will be a constant stimulus to the wider and more intelligent use of books.

## 3. Writing.

All the activities suggested for the junior grades should be carried on to a higher standard.

### (1) Diaries and records.

Individual initiative in their arrangement, and pride in their appearance, should be encouraged, provided that clarity and order are maintained.

### (2) Preparing agenda and keeping minutes for school assemblies and other associations.

### (3) Preparing a regular news-digest under appropriate headings (e. g., school, local, India, world news-items).

### (4) Contributing to and editing a school magazine.

### (5) Preparing booklets on topics of practical hygiene etc., for use in junior classes or in the village.

### (6) Writing letters — business, apology, invita-

tion, congratulations, condolence etc. These should so far as possible be *real* letters, actually sent in connection with real needs and events.

- (7) Filling up forms — e. g. Post Office money-orders, telegrams, savings bank etc.
- (8) Preparing notices, announcements, posters and charts for exhibition, adult education and other programmes.

#### *A Note on Grammar Teaching.*

The children should be trained throughout in the use, both in speech and writing, of grammatically correct forms, and their mistakes in grammar and syntax should be corrected. But this "grammar" teaching should always be concrete, and be treated as an aid to the clear expression of ideas.

It must always be remembered that the power to use language correctly and well is acquired by practice, by the imitation of good speech and the reading of well-written books. It is a matter of habit, not of reasoning, and knowledge of grammatical "rules" has very little to do with it.

Children under 14 years of age can and do memorise parrot-like the rules of formal grammar, but it is very doubtful whether they are sufficiently *mature* in mind to understand the abstract categories of the grammarian, and it is likely that the time usually spent on teaching these in schools is educationally a waste.

On the other hand, children in Grades VII and VIII should certainly be taught something of the origin and history of their own language and its script, and its relationship to other Indian languages. This subject is closely related to social studies, especially to the syllabus suggested for Grade VII.

#### *II. Use of the National Language.*

(Where this is not the mother-tongue or regional language).

1. It is recommended that the study of Hindustani as a second language should not be begun normally till Grade VI.

2. The study should be based on any series of good text-books written specially for non-Hindustani speaking learners.
3. Pupils of Grades VII and VIII may practise keeping simple school records and writing necessary business letters in Hindustani as well as in the mother-tongue.  
It is recommended that the detailed syllabus in Hindustani should be drawn up for each region to suit local conditions.

### *III. Mathematics.*

#### *Grade I. (6—7 years).*

1. Counting up to 100.
2. Weights and measurements :
  - (a) Weights : Seer, paw, chatak, tola in connection with : (i) Picking of cotton, (ii) Ginning : Weighing cotton lint and seeds. (iii) Spinning the yarn. (iv) Gardening : Weighing the vegetables produced in the garden. (v) Health : Regular taking of the weights of the children.
  - (b) Measurements : Foot, inch, span, finger, in connection with : (i) Health—children's height and chest measurements, (ii) Cleanliness—size of class-room, doors, compound etc., (iii) Gardening—size of plots. (iv) Spinning—length of yarn, tar, patl, lati.
  - (c) Measurements of grain by local methods.
  - (d) Measurement of time :—minute, hour, day, night, week, month, year.
  - (e) Simple addition and subtraction in connection with : (i) Picking, (ii) Silver-making, (iii) Spinning, (iv) Gardening, (v) Weighing.
3. Money—Rupees, annas, pice, in connection with school or family marketing.
4. Acquaintance with simple geometrical forms

in connection with gardening, straight lines, curved lines, square, circle.

5. Ability to read and write their own rounds of yarn.

*Grade II.* (7 — 8 years).

1. Counting, reading and writing up to 100.
2. Simple addition and subtraction in connection with class activities in cleanliness, gardening, craft work and games. Multiplication by 10, 5 and 2.
3. Weights and measurements : Further practice in weights and measurements in connection with the activities of the class in cleanliness, gardening, craft-work and games. Telling the time.
4. Acquaintance with simple geometrical forms in connection with gardening. Square, rectangle, triangle and circle.
5. Maintaining daily craft record.

*Grade III.* (8 — 9 years).

1. Understanding, reading and writing of numbers up to 2000.
2. Multiplication tables from 2 to 10, 12 and 16.
3. Practice in the four simple rules in connection with all class activities.
4. Practice in compound addition and subtraction in connection with all school activities. Indian tables of money and weight (in local use).
5. Tables of length, capacity and time. Telling the time by the clock.
6. The idea of a fraction —  $\frac{1}{2}$ ,  $\frac{1}{3}$ ,  $\frac{2}{3}$ .
7. The idea of an area — making simple plans.
8. Recognition of common solids.

*Grade IV.* (9 — 10 years).

1. Understanding, reading and writing of numbers correlated to the activities in the school, home and village.
2. Simple and compound rules as required in

calculation relating to class activity, and fractions in this connection.

3. Averages — very simple.
4. Graphs — very simple.
5. Beginning of book-keeping in connection with craft-work and gardening.
6. Practical geometry in connection with gardening.
  - (a) Area of a square and a rectangle.
  - (b) Making of parallel lines.
  - (c) Finding the centre of a circle and drawing a circle with a given centre.

*Grade V. (10 — 11 years).*

In connection with the class and school activities in cleanliness, health and gardening, spinning and weaving and school celebrations, the pupils, should have knowledge of the following processes :

1. Four fundamental rules — simple and compound.
2. Simple fractions, use of the four rules.
3. Decimals — measurements to one place only.
4. Practice.
5. Unitary method.
6. The rule of three.
7. Percentages — a form of fractions.
8. Averages.
9. Book-keeping — statements of income and expenditure. Records of the cleanliness, stores.
10. Scale drawing. Measurement of an irregular area by counting squares.

*Grade VI. (11 — 12 years).*

1. The four rules with decimal fractions, to two decimal places.
2. Averages to two decimal places.
3. Conversion of vulgar to decimal fractions.
4. Simple interest, profit and loss.
5. The idea of approximation.
6. Ratio and proportion. The rule of three. Making a right angle with string 3 : 4 : 5.

7. Time, work and speed.
  8. Areas — the bigha and the acre. Area of fields, local methods.
  9. The shapes of solids — volume of cubes and cuboids.
  10. Book-keeping — records of the craft stores.
- Grades VII and VIII. (12 — 14 years).*

1. Revision and extension of previous work.
2. Simple equations — How some of the arithmetical problems may be simplified by equations using one unknown.
3. Fundamentals of algebra — how tedious arithmetical sums can be simplified by using algebra.
4. Graphs — continuation of work previously done.
5. Budgeting and estimating.
6. Square root.
7. Simple interest — in connection with the co-operative store.
8. Book-keeping — budget, cash-book and ledger, trial balance, vouchers. This should be practised in the co-operative store which should be managed by pupils of these grades.
9. Practical Geometry :
  - (a) Revision of previous work.
  - (b) Formula — for calculation of areas, volumes.
  - (c) Drawing of areas to scale.
  - (d) Simple plan drawing for buildings, etc.
  - (e) Verification of a few geometrical theorems with regard to triangles, straight lines, parallel lines, and circle. Deducing the theorems.

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#### **G. The Creative and Recreative Arts.**

This section includes :

- I. *Literature.*
- II. *Music, Dance and Drama.*



III. *Drawing, Painting and the Decorative Arts.*

IV. *Recreative Games.*

All these are closely inter-related and the production of a good drama — a project which should be undertaken at least once a year — will involve all, or almost all of them, besides giving most valuable training in co-operative team-work.

I. **Literature :**

The foundations of good taste in literature should be laid in Grades I and II, where all poems and stories selected for reading to the children should be of a good literary standard.

*Grades III and IV. (8 — 10 years).*

1. The teacher should read to the children specimens of good literature in the mother-tongue suited to their age and understanding. Good simple poetry, well read or recited, should be included.
2. The children should begin to read for themselves in the class or school library.
3. The choice of items for an entertainment gives training in appreciation.

*Grades V and VI. (10 — 12 years).*

1. Beginnings of the study of the literature of the mother-tongue, through suitable representative selections.
2. Free library reading. Stories from the great epics, romances and dramas of world literature should be chosen for the library.

*Grades VII and VIII. (12 — 14 years).*

1. A more advanced selection from the best writers in the child's mother-tongue, arranged chronologically and with a simple presentation of the history of the literature of the mother-tongue.
2. Selections from the masterpieces of various Indian and world literatures, in the best available translations, including extracts from

the scriptures and religious writings of the principal world religions.

## II. Music, Dance and Drama :

### A. For Grades I — V.

*Music* : The main objective for the teaching of music at this stage is to give the children joy in good music and rhythmic movement and to lay the foundation for the promotion of good taste and appreciation of the cultural heritage of India in music.

Every basic school may not possess a trained music teacher. In that case the headmaster or headmistress should try to make use of local talent in music and invite local singers to the school to give demonstrations and if possible teach simple songs to the children. The songs should however be selected by the headmaster.

*Equipment* : Only simple locally available musical instruments (like the dholak, flute, cymbals, or in South India mridangam, tambura or sruti box) should be provided at the school.

Every training school for teachers should make a careful graded selection of songs suited to children in grades I to V for the use of the teachers in its own linguistic area. The songs should include :

- (i) Simple bhajans and religious songs. \*
- (ii) Simple 'dhuns' set to music. \*
- (iv) Folk songs, including songs relating to the life of nature.
- (v) Marching songs and action songs.
- (vi) Popular songs.

Children should be taught to sing together with full voice and with clear articulation, keeping time with their hands. Habits of correct posture and voice production should be formed from the very beginning. The following mistakes should be avoided :

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\* In South India, simple namavalis, selections from Tevaram, Tiruppugazh, and Divyanama Kirtanas.

- (i) Singing through the nose.
- (ii) Singing in too high pitch.

Individual singing should be encouraged from Grade III onwards. Formal training in music should however begin only from Grade VI onwards.

*Dance and Drama:* Group dancing and the performance of simple dramas should form an important part of the educational programme of children in Grades I to V.

Group dancing with simple steps based on the tradition of local folk dancing should be taught. Children should also be encouraged to improvise dancing and musical games of their own. Many old rural games with singing may be adopted as group dancing. Acting of simple dramas should form a regular part of the school programme. The decoration of stage and children should be simple but artistic. A selection of such simple dramas should be prepared at every training school and every teacher should be provided with a copy before leaving. A few subjects are suggested :

- (i) Dramas and dances based on agricultural operations in school or village, e. g. sowing and harvesting.
- (ii) Incidents from mythology and legend, and from the lives of saints and religious teachers.
- (iii) Incidents from history.
- (iv) Dramas illustrating the life of children in other lands.

#### *B. Hindustani Music for Grades VI, VII and VIII.*

*Introduction:* The syllabus of music for Grades VI, VII and VIII is partly a continuation of the syllabus of Grades I to V and partly an introduction to classical music.

Group singing of religious songs, dhuns, national songs, and folk songs will be continued ; at the same time children with a musical gift will begin formal training in classical music. The system recommended is that of Bhatkhande which has been accepted at the Bhatkhande University of Music and most of the universities of North

India. Tambura and Tabala should be used as accompaniments to singing and the use of the harmonium should be disallowed.

*Grade VI.*

1. Knowledge of the twelve notes of Hindustani music.
2. Alankaras in Shuddha notes.
3. Sargam and songs in the following Ragas :—  
(i) Yaman Kalyan. (ii) Bilawal. (iii) Bhupali  
(iv) Kafi.
4. Tal — Trital.
5. At least two songs each from the following :—  
Guru Nanak, Kabir.
6. Shabads from Granth Sahib.
7. National songs.
8. Folk songs and popular songs.

*Grade VII.*

1. Revision of the syllabus prescribed for Grade VI.
2. Sargam and songs in the following Ragas :—  
(i) Bhairavi, (ii) Asavari, (iii) Khamaj, (iv) Des.
3. Tal — Dadara and Kaharwa.
4. Bhajans — at least 2 each from the following saints :— Surdas, Mirabai.
5. Shabads from Granth Sahib.
6. National songs.
7. Folk songs and popular songs.

*Grade VIII.*

1. Revision of the syllabus prescribed for Grades VI and VII.
2. Sargam, Lakshan geets and songs in the following Ragas :—  
(i) Bhairavi, (ii) Bihag, (iii) Bhimpalasi, (iv) Hamir, (v) Sarang.
3. Talas — Knowledge of Ektal and Jhaptal.
4. Definition of Saptak, Thatā, Raga, Alankar, Swara, Shuddha, Komal and Talas.
5. Knowledge of the ten Thatas of Indian music.

6. Bhajans from the following saints in addition to those mentioned in the syllabus of Grades VI and VII.

(i) Tulsidas, Raidas, Dadu.

(ii) At least one Bhajan each from the following saints from the other provinces of India :—Tukaram (Maharashtra), Vidyapati (Bihar), Chandidas, Tagore (Bengal), Narasingh Mehta (Gujarat), Thyagaraya (S. India).

7. National songs.

8. Folk songs and popular songs.

N. B. Tests in music will be only practical for classes VI and VII and both theoretical and practical for class VIII.

#### *C. Karnatic Music for Grades VI, VII and VIII.*

It is recommended that Basic School in South India should follow the syllabus published by the Government of Madras for the Reorganised Secondary School Course, Forms, I, II and III. For this purpose Grade VI of a Basic School may be regarded as equivalent to Form I. For ready reference the syllabus of the Madras Government is given below. A few songs by famous composers in other parts of India should also be learned, as suggested under Hindustani Music, Grade VIII Section 6 (ii).

*Syllabus in Karnatic Music for the Reorganised Secondary School Course (Madras) Forms I — III.*

In each year the pupils may be taught about 15 to 20 songs and also made familiar with at least ten technical terms, five ragas and four composers so that at the end of the II form, a pupil would have learnt about 50 songs and become familiar with 30 technical terms, 15 ragas and 12 composers. In addition to Abhyasagana (technical course), songs taught in the three forms shall include graded selections from art music, sacred music, opera music and folk music. National songs, marches in South Indian ragas and some ballads shall also be taught. Songs taught shall be in the regional language. Emphasis shall be laid on con-  
Graded exercises in notation, musical

dictation, musical punctuation and sight singing shall form part of the course.

*Form I:* Sruti svara exercises; Svaravali; Higher and Lower octave svara exercises; Kala pramana svara exercises; Janta svara exercises; Simple songs in Adi and Rupaka talas in sama eduppu.

*Form II:* Datu svara exercises; practice of the Svaravali and Janta svara exercises in trikalam; Sapta tala Alankaras; The four gitas in Malahari raga. Simple songs with a few sangatis in Adi and Rupaka talas.

*Form III:* Practice of the Sapta tala alankaras in trikala; six gitas; one svarajati and one Adi tala varna. Easy songs in Chapu tala and kritis with a simple gamakas.

### **III. Drawing, Painting and Decorative Arts.**

*Grades I and II. 6—8 years).*

*Self-expression* should be the main object of art teaching at this stage. Children will paint from their daily experience and imagination, and draw pictures connected with their activities and the things round them. They should be provided with *large* surfaces (paper, blackboard etc.) for their work and free, bold arm-movements should be encouraged. Care should be taken to secure correct posture, a correct way of holding the pencil, and habits of cleanliness and orderliness in handling material and equipment. Slate and pencil, pen and colours, crayon, water-colours may be used.

*Colour and form* (to be treated as it arises naturally from the children's activities).

Correct names of colours. Colour contrasts, e. g. black and white, red and green, yellow and black. Seeking colours in nature. Comparison of different forms, e. g. the leaves of mango, peepul, banana. Arranging coloured seeds on the traced outline of leaves. Making pictures on the floor with coloured seeds.

*Grade III. (8—9 years).*

1. The chief objective should be free self-expression as before. Children will draw freely from

their imagination or experience in school life and at home.

2. Illustrations of stories.
3. Blending of colours — red and blue, blue and yellow.
4. Further study of form and colour.
5. Design and decoration — of the class-room or school with flowers, leaves and floor designs (*rangoli, alpona, kolam*).

**Grade IV.** (9 — 10 years).

1. Drawing of memory pictures with colours.
2. Colour — different shades of the same colour, e. g. of green in various leaves.
3. Form — study in greater detail.
4. Design and decoration — development of Grade III work.
5. Mounting drawings on a harmonising background.
6. Designing borders with colours.

**Grade V.** (10 — 11 years).

1. Continuation of work of previous grades.
2. Beginnings of perspective.
3. Colours — mutual relationships. Warm and cool colours, matching and contrasting colours.
4. Landscape sketches for book covers etc.
5. Illustrations for social studies or general science.
6. Design and decoration for festivals or school celebrations.

**Note:**—Children at this stage should start making their own colours and brushes with locally available material.

**Grade VI.** (11 — 12 years).

1. Continuation of the activities of Grade V in original painting, class-room and school decoration, study of perspective etc.
2. Colour — naming shades according to natural and other familiar objects (*Sadrishyam*), e. g. parrot green, sky blue.

3. Model drawing — fruits, vegetables, flowers, class equipment.
4. Nature study. Study of an animal, a bird and a tree, with pencil, pastel, or chalk on black-board.
5. Design. Study of basic forms in ornamental art. Collection of traditional and other designs by tracing or copying. Making original textile designs.
6. Decorative crafts. Decorating earthen pots. Papier machi work, embroidery, toy-making, mat and basket making may be encouraged. Local crafts, stitches and designs should be studied.
7. Ideas of proportion and picture composition. Posters, and picture albums for children of lower classes.

*Grade VII. (12 — 13 years).*

1. Design. Finding the ornamental form in nature and utilising it for decorative art.
2. Decorative craft continued.
3. Original painting — composition and colour scheme, detection of obvious flaws.
4. Studying and copying of old paintings in pencil and colours, together with a brief outline of the history and main centres of art in India. (A map of these may be made).
5. Posters, wall-paintings and illustrations on village health, social and cultural work.
6. Preparing, illustrating and binding a book on a subject of the pupil's own choice.
7. Elementary anatomy in connection with nature-study work.
8. Black board drawing (The *Rupavali* of Shri Nandalal Bose is recommended as a guide).

*Grade VIII. (13 — 14 years).*

1. Sketching from nature in water-colour, pastel and pencil.



2. Plan drawing, elevations, and section drawing.
3. Colour and composition — designing costumes and stage arrangements for school dramas.
4. Design and decoration. Ability to take responsibility for decoration for any festival or function in class, school or village.
5. Further study of art in India.
6. Revision and continuation of work of the previous grades.

*Note:* Throughout the course, as many different techniques as possible should be introduced, e.g. paper-cutting, stencilling, lino-cut, crayon, pastel, clay-modelling. This may be done in all eight grades according to circumstances.

#### **IV. Recreative Games (and Physical Training) :**

A large part of what is usually included in Physical Education has already been dealt with in this syllabus under two heads.

1. *Health.* In any well-run Basic School a great deal of physical exercise is obtained through normal life activities, such as sweeping, digging and drawing water. The value of these for the development of the body should be stressed in the health syllabus. Formal drills and asans intended to exercise and develop the body, or particular organs, are also noted in the health syllabus.
2. *Dancing* is an admirable exercise and an excellent training in the control and balance of the body. Folk dancing as a recreation should be everywhere encouraged.

In addition, the following points may be noted.

*Grades I, II and III.* (6 — 9 years).

*Free play activity.* Wherever possible some simple equipment for climbing, jumping and skipping should be provided.

*Formal exercises.* Falling in, walking and running in a line, halting promptly and with balance, right and left turn.

*Grades IV — VIII. (6 — 9 years).*

*Individual skills and exercises.*

Children should be encouraged to practise all local and indigenous physical skills which are suited to their stage of growth. They may also be encouraged to measure and improve their skill in athletics — long and high jump, pole jump, ball throwing, running speed etc.

*Team Games.*

Indigenous team games, especially those that provide enjoyment without needing any equipment, and which are possible in the poorest village, should be taught and encouraged in the school.

## CHAPTER IV

### Education through Ordinary Living

In Chapters II and III the aim was to show how a good general education may be built up round a few purposive life activities. In this chapter a few suggestions are made on how the most ordinary routine of living may become the starting point of scientific and social education. The correlations suggested are all with the work of the higher grades, for, as has already been pointed out, the primary object in teaching little children is to form good *habits* of living, and elementary explanations should be given only when asked for. It should be repeated that there is no hard-and-fast rule about the grade when teaching "ought" to be given. The best time to supply information is always when the children are actively interested and spontaneously ask for it.

#### A. *Activities of Daily Life.*

##### *Activity.*

1. Regular morning evacuation of the bowels and disposal of night-soil and urine.
2. Cleaning teeth.

##### *Correlation.*

*The human body* a perfect machine. Like other machines, it cannot work properly if waste products accumulate. They must therefore be eliminated (IV, V). *The Excretory System*—its working. Need of covering excreta—fly-borne diseases. *Urine*—chemical composition, value as a "Starter". *Composting* and types of latrines (VI).

*Decomposition* of food particles. *Structure of a tooth* and action of acids on the enamel.

*Necessary physical and chemical properties of a cleaning agent*—antiseptic, mildly abrasive, slightly alkaline. *Datoun* and activated charcoal with common salt fulfil these conditions best (VII).

*Irregular teeth* — causes.

*Brittle enamel* — calcium deficiency, result in carious teeth and pyorrhoea (VI).

3. Gargling. Value of common salt — prevention of sore throat etc. (V).
4. Massage of the gums. Increases circulation (V).  
Spongy gums due to Vitamin C deficiency (VI).
5. Cleaning the nose and eyes. Work of mucous membranes in filtering impurities and infections from the air we breathe (V, VII).  
Unclean eyes infected with sore eyes (V).  
Structure of the eye (VIII).
6. Physical exercises. The respiratory and muscular systems (VI).  
Corrective and complementary exercises (VII).
7. Bathing. Cold bath and brisk circulation. Value of an *occasional* hot bath. Oil bath — effects of massage — value of oil (V, VI).  
Composition of soap and other cleansing agents (VII).
8. Clothing. Related to climate and activities. Effect on health. Value of exposing the skin to sun and air. Physiology of the skin (V, VI).
9. Washing clothes. Devices for drawing water (V, VI). Action of soap and other cleansing agents on the fibre. Bleaching action of the sun (VII).
10. School work. Suitable lighting and ventilation (V) Equipment suited to physical development of child. A balanced school programme (VI, VII). Correct posture — exaggerated posture leading to permanent deformities (VII).

Planning school work for morning and afternoon, summer and winter etc. (V, VIII).

11. Midday meal.

Regular hour — why? Dietetic aspect, cleanliness. (IV, — V). How to eat — chewing — rest after food, the physiology of digestion (VI). Metal for vessels and plates — action of cleaning materials on metals — action of heat and food chemicals (VI, VII).

12. Evening recreation,  
(games,  
dancing).

The need for recreation, both psychological and physiological (VII, VIII).

13. Evening meal.

Why it should be lighter. The proper interval between meal and sleep. (VI).

14. Reading,  
writing and  
craft work at  
night.

Importance of proper lighting (VI). Harm done to the eye by lights which are too bright or too dim (VIII).

15. Going to bed.

Cleaning the mouth — why? (See 2). Aired bed, clean sheets, proper ventilation, open-air sleep best (V). Posture for sleep — breathing through the nose — not covering the face — number of people in a room — respiratory system (VI). Danger of closed windows and burning lamp. (VI — VII).

Sex hygiene and purity of thoughts (VI onwards).

B. *Periodical and Occasional Experiences.*

1. A weekly or  
special market  
(e. g. a cattle  
market).

The goods displayed, their origin, price and value. How they are brought. Wholesale and retail dealing.

The people who bring the goods. How their daily needs are supplied while they are at the market, where they sleep, how they cook or obtain food, the provision (actual and

desirable) for latrines, bathing etc. The site of the market, provision for health and cleanliness, the possible spread of disease. The levy of market fees, civic responsibility.

2. Social or religious festivals.

The origin, history, and significance (past and present) of the festival. Cleanliness programmes associated with it, their origin and scientific value. Special dishes associated with it, food value and proper preparation.

Literary references and local traditions associated with it. Various customs followed in different parts of India, and analogous festivals in other countries (e. g. the world-wide celebration of harvest festivals).

3. Weddings and funerals, and other social events.

Customs associated with weddings, their origin and social usefulness. Undesirable features—e. g. immoderate expenditure and vulgar display. Standards of simplicity and good taste.

Sanitary practices connected with death, the proper disposal of the dead. Various types of funeral rites and ceremonies shaped by environment and by social and religious tradition.

4. Special civic occasions.

(Examples: Independence Day, Tree-planting Week, Gandhi Jayanti, Baby Week etc.).

A special opportunity for the school to function as an integral part of the village community. Preparation should cover historical, geographical and civic features, hygienic aspects, and many other things. Each grade should learn by active participation in the civic programme according to the capacity and understanding of the children.



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